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ABSTRACT

Selected titles of refereed research papers contained in this volume include the following: "Analysis of Computer Use by Four-Year University Faculty Members" (Duff et al.); "Analysis of Undergraduate Coursework Completed by Prospective Business Teachers" (Schmidt et al.); "Business Educators' Perceptions Regarding the Integration of Business Education (BE) and Academic Courses" (McEwen et al.); "Collaboration in Business Writing" (Wray); "Comparison of Faculties' and Business Executives' Perceptions Concerning the Importance of Business Communications Topic Areas to the Business Communication Course, the Daily Activities of a Business Executive, and the Business Curriculum" (Bridges); "Desktop Publishing Competencies Needed in the Business World" (Walker, Echternacht); "Determination of Attributes of an Effective BE Teacher as Perceived by Georgia High School BE Teachers and High School BE Students" (Stitt-Gohdes, Kelly); "Developing and Teaching an Auditing Course in the 1990s" (Kanter); "Disability Disclosure in Employment Communication" (Merrier et al.); "Document Origination and Factors Contributing to Selection of Origination Method" (Wiggs); "Effect of a Report Reader's Cognitive Style on Decision Making and the Use of Graphic Aids in a Report" (Brown); "Effects of Computer-Assisted Instruction on Anxiety in First-Year Undergraduate Accounting Students" (Hurt, Olfman); "Employer Assessments of Strengths and Weaknesses of Recent Business Graduates" (Davison et al.); "Establishing Electronic Keyboarding Speed and Accuracy Standards for Postsecondary Timed Writings" (Arnold et al.); "Foreign Languages and International Business Correspondence" (Scott, Green); "Knowledge of Entrepreneurship" (Berns, Klopping); "Nontechnical Competency Instruction in Illinois Secondary and Postsecondary BE" (Anderson-Yates et al.); "Occupational Profile and On-the-Job Experiences/Perceptions of Office Management Technology Associate Degree Graduates and Their Employers and the Resulting Curriculum Implications" (Barton, Citano); "Relationship of Employee Perceptions of Work and Adherence/Nonadherence to Protestant Work Ethic and Contemporary Work Values" (Wayne, Mitchell); "Research Agenda for Studying Technologically Mediated Instructional Strategies in Business and Education" (Kizzier, Pollard); "Secretaries in the 90s" (Creighton et al.); and "Selected Characteristics Affecting the Collaborative Writing of Administrative Management Society Members in Iowa, Kansas, Missouri, and Nebraska" (Schliefer). (YLB)

ED 377 392

DELTA PI EPSILON

National Honorary Professional Graduate Society in Business Education

Proceedings

1992 National Research Conference

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DELTA PI EPSILON

1992 NATIONAL RESEARCH CONFERENCE

November 12-14, 1992
Los Angeles, California

Conference Chairperson: **Kevin Mulcahy**
Buffalo State College
Buffalo, New York

Committee Members:
Marcia Anderson-Yates
James C. Bennett
Marian McGorry
Jon A. Shank
David J. Hyslop (Liaison)

Welcome to Los Angeles and the 1992 Delta Pi Epsilon National Research Conference. The Research Conference Committee members have been working for over a year on this program, and we hope the conference will stimulate thought and discussion on a variety of research topics.

The committee decided to continue the exciting research training project begun in Columbus, renaming it Enterprise Los Angeles. Along with the refereed papers, the invited speakers, and a few social activities, we believe you will leave Los Angeles with some fresh ideas and the research expertise to put them to good use.

We wish to express our appreciation to everyone who helped put this conference together.

Kevin Mulcahy

Greetings from the DPE National President

Dear Friends:

The outstanding program of the 1992 Delta Pi Epsilon Research National Conference continues the tradition in the history of the Society of challenging, thought-provoking sessions. The diversity of topics for sessions, the professional expertise of the speakers, and the focus on current and future research concerns demonstrate the commitment to research of Delta Pi Epsilon and its members.

Participants in the research conference and members of Delta Pi Epsilon throughout the United States will find the conference and the research reports distributed as a result of it very worthwhile. We appreciate the work of the Research Conference Committee, under the leadership of Kevin Mulcahy. In 1990 Delta Pi Epsilon initiated an in-depth training experience for new researchers, Project Columbus. This year Enterprise Los Angeles, coordinated by Judy Lambrecht, provides a similar opportunity for new researchers. We thank all those involved for their work in planning and coordinating this year's conference.

On behalf of the National Executive Board of Delta Pi Epsilon, I welcome you to the 1992 National Research Conference and to Los Angeles. You will find your experiences here professionally rewarding and enjoyable.

Betty J. Brown

Delta Pi Epsilon National Executive Board

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• •

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Delta Pi Epsilon National Office

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CONFERENCE PROGRAM

Thursday, November 12

3:00 pm - 7:30 pm **REGISTRATION** (Great Hall)

7:00 pm - 8:00 pm **NATIONAL PRESIDENT'S RECEPTION** (Producer Room)

8:00 pm - 9:30 pm **GENERAL SESSION I** (East Ballroom)

Chairperson: Kevin Mulcahy, Buffalo State College, Buffalo, New York

WELCOME AND INTRODUCTIONS

GREETINGS FROM DELTA PI EPSILON
Betty J. Brown, DPE National President, Ball State University, Muncie, Indiana

ROLL CALL OF STATES
Marian C. Crawford, DPE National Secretary, University of Arkansas at Little Rock, Little Rock, Arkansas

Speaker: Dr. Gerald Hayward, Deputy Director, National Center for Research in Vocational Education, University of California at Berkeley, Berkeley, California

PREPARING THE WORKFORCE OF THE FUTURE: POLICY IMPLICATIONS OF CURRENT RESEARCH

The National Center for Research in Vocational Education has just completed its five-year program of research. Its findings have important implications for the way schools and colleges prepare students for the world of work. In fact, when viewed in their totality, the research findings suggest a radical restructuring of the school-to-work linkage. Hayward will discuss the major findings and suggest important implications for policy and practice.

OVERVIEW OF CONFERENCE

ANNOUNCEMENTS

Friday, November 13

8:30 am - 10:00 am **GENERAL SESSION II** (East Ballroom)

Chairperson: James C. Bennett, California State University, Northridge, Northridge, California

WELCOME AND INTRODUCTIONS

Speaker: Maria Stark, Vice President for Entertainment, Liberman Research, Los Angeles, California

THE IMPACT OF MARKET RESEARCH ON THE MOTION PICTURE INDUSTRY

ANNOUNCEMENTS

10:00 am - 10:30 am **REFRESHMENTS** (Great Hall)

10:30 am - 12 noon **RESEARCH REPORTS A** (Studio I)

Chairperson: Ellis J. Jones, Gustavus Adolphus College, St. Peter, Minnesota

AN ANALYSIS OF COMPUTER USE BY FOUR-YEAR UNIVERSITY FACULTY MEMBERS

This study determined how faculty at a mid-sized, regional, comprehensive four-year university use computers to support teaching and research. Responses were received from 230 faculty, 71.4 percent of those at the institution. Findings indicate what percentage of respondents use computers; what types of computers and operating systems they use; and what teaching and research activities they do with computers. Differences in use of computers related to demographic characteristics will also be reported.

Thomas Duff, Patricia Merrier, and Linda Williams, University of Minnesota, Duluth, Minnesota

A RESEARCH AGENDA FOR STUDYING TECHNOLOGICALLY MEDIATED INSTRUCTIONAL STRATEGIES IN BUSINESS AND EDUCATION

Background and methods used to develop a research agenda for studying technologically mediated instructional strategies (TMIS) will be presented. A model of a research agenda, which identifies variables for further study, will be presented. In addition, potential research questions, research findings to date, and a matrix of a proposed decision-making/contingency model will be presented. The purpose of the model is to provide trainers and educators with research-based guidance in the selection of various TMIS.

Donna Kizzier, University of Nebraska at Lincoln;
Constance Pollard, University of Idaho at Moscow

TECHNOLOGICAL EXCELLENCE: TIME REQUIRED AND COMPENSATION RECEIVED

We know that business educators spend considerable time in trying to keep technologically up to date. How much time? What kinds of activities? Is there financial compensation? The results of Gamma Chi Chapter's research project will be presented.

Rebecca Limback, Central Missouri State University, Warrensburg, Missouri

10:30 am - 12 noon **RESEARCH REPORTS B** (Studio II)

Chairperson: Peter F. Meggison, Massasoit Community College, Brockton, Massachusetts

THE EFFECT OF A REPORT READER'S COGNITIVE STYLE ON DECISION MAKING AND THE USE OF GRAPHIC AIDS IN A REPORT

This study explored the relationships among cognitive style, decision making, and graphic aids to determine whether a user effectively integrates cognitive style and graphics into the decision-making process. Procedures and methodology of the experimental study will be discussed. Recommendations based on the conclusions will be made for readers, writers, and instructors of business writing.

Paula E. Brown, Central Michigan University, Mt. Pleasant, Michigan

COLLABORATIVE WRITING IN THE BUSINESS WORLD: IMPLICATIONS FOR BUSINESS EDUCATORS

This study of business writers provided descriptive information about collaborative writing in business and examined characteristics affecting collaboration in writing. The survey of Administrative Management Society members produced 170 usable questionnaires. Study highlights include the following: collaborative writing is more common at the revising stage than at other stages; as the document length increased, the amount of collaboration also increased; and respondents preferred working with one other person. Seven recommendations on teaching collaborative business writing are made.

Jacqueline M. Schliefer, Western Kentucky University, Bowling Green, Kentucky

COLLABORATION IN BUSINESS WRITING: STRENGTHS AND WEAKNESSES AS PERCEIVED BY SELECTED COLLEGE STUDENTS

This research identifies the strengths and weaknesses of collaborative writing as perceived by selected college students. Sixty junior and senior business majors enrolled in a required writing course served as the population for the study. After the students participated in a collaborative writing project, the Nominal

Group Technique was used to identify and rank the students' perceived strengths and weaknesses of collaborative writing. A short questionnaire was also completed by members of the population to reveal their perceptions pertaining to other characteristics of collaborative writing.

Ralph D. Wray, Illinois State University, Normal, Illinois

10:30 am - 12 noon **RESEARCH ASSISTANCE AND TRAINING** (Studio III)

Chairperson: Jon A. Shank, Robert Morris College, Coraopolis, Pennsylvania

RESEARCH DESIGNS: SAMPLE SELECTION, CONTROLLING FOR ERRORS, ANALYZING AND INTERPRETING DATA

Daniel Wunsch, Northern Illinois University, DeKalb, Illinois

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12 noon - 1:30 pm **LUNCHEON** (Roof Garden)

Remarks: Janet M. Treichel, NBEA Executive Director
H. Robert Stocker, NABTE President

1:30 pm - 3:00 pm **RESEARCH REPORTS A** (Studio I)

Chairperson: H. Robert Stocker, Utah State University, Logan, Utah

THE EFFECTS OF COMPUTER-ASSISTED INSTRUCTION ON ANXIETY IN FIRST-YEAR UNDERGRADUATE ACCOUNTING STUDENTS

As accounting educators, we are inadequately preparing our students for success in today's business environment if we do not integrate computer applications at all levels of the curriculum. However, the results of this study showed that improper implementation can lead to increased student anxiety toward accounting, possibly impeding the learning process. The paper presentation will focus on the results of the study and positive suggestions for computer implementation in first-year accounting courses.

Robert L. Hurt, California State Polytechnic University, Pomona, California; Lorne Olfman, Claremont College, Claremont, California

THE USE OF TECHNOLOGY IN INDIANA BUSINESS CLASSROOMS WITH IMPLICATIONS FOR TRAINING

This study was conducted by members of Pi Chapter in response to the question, "In what ways are Indiana business educators using technology in the classroom?" The researchers collected data about whether software is taught as a separate course or within a course, what content is taught with the assistance of microcomputers, how the computer is used as a management tool for instruction, and what training teachers believed they needed.

Data revealed that the use of technology throughout the state was not as expected. Findings and related issues will be discussed.

Carolee Sormunen and Marilyn Chalupa, Ball State University, Muncie, Indiana

DOCUMENT ORIGINATION METHODS: IMPLICATIONS FOR BUSINESS CURRICULA

This study was conducted to determine origination methods used by business professionals, relationships of factors that influence selection of document origination methods, and implications for business curricula. Findings indicate that professionals create memos more frequently than they create other documents; they use computers as their primary document origination method; they believe communication classes should include instruction in originating business documents using word processing software; and they feel their desire to maintain control of their own documents as well as electronic mail will influence their choice of document origination in the future.

Linda Henson Wiggs, Southeast Missouri State University, Cape Girardeau, Missouri

1:30 pm - 3:00 pm **RESEARCH REPORTS B** (Studio II)

Chairperson: Marian C. Crawford, University of Arkansas at Little Rock, Little Rock, Arkansas

KNOWLEDGE OF ENTREPRENEURSHIP: VOCATIONAL BUSINESS AND MARKETING TEACHERS AS COMPARED TO OTHER VOCATIONAL TEACHERS

This study compared the entrepreneurship knowledge base of teachers certified to teach vocational education in Northwest Ohio. The research questions related to a vocational teacher's current knowledge of entrepreneurship, the differences in the teacher's knowledge based on program areas, and the differences in the teacher's knowledge based on certification. This study provided evidence that the entrepreneurship knowledge base of vocational education teachers varies based upon teaching program area and the type of certification a teacher holds.

Robert G. Berns and Inge M. Klopping, Bowling Green State University, Bowling Green, Ohio

AN ANALYSIS OF UNDERGRADUATE COURSEWORK COMPLETED BY PROSPECTIVE BUSINESS TEACHERS

If teachers are to integrate basic academic skills into their instruction, they must have reasonable exposure to these skills as part of their teacher preparation studies. This research was thus undertaken to determine what courses business teachers complete during their teacher preparation studies. The coursework taken was then compared with courses completed by other teachers. Included in the study were 133 business teacher transcripts from 18 universities. Analysis of the coded transcript data revealed that graduates who majored in business teacher

education had completed extensive general studies coursework and extensive coursework in their content area of instruction.

B. June Schmidt, Curtis R. Finch, and J. Dale Oliver, Virginia Polytechnic Institute and State University, Blacksburg, Virginia

DETERMINATION OF ATTRIBUTES OF AN EFFECTIVE BUSINESS EDUCATION TEACHER AS PERCEIVED BY HIGH SCHOOL BUSINESS EDUCATION TEACHERS AND HIGH SCHOOL BUSINESS EDUCATION STUDENTS

Novice and experienced business education teachers throughout Georgia were surveyed to determine their perceptions of what makes a teacher effective. Students in their respective classes were also given an opportunity to provide input with regard to what they thought makes a teacher effective. Data were collected from teachers and students in rural, suburban, and urban schools in order to determine whether or not differences exist in these very different educational environments.

Wanda L. Stitt-Gohdes and Melinda M. Kelly, University of Georgia, Athens, Georgia

1:30 pm - 3:00 pm **RESEARCH ASSISTANCE AND TRAINING** (Studio III)

Chairperson: Gayle A. Stelter, Mankato State University, Mankato, Minnesota

THIS IS JEOPARDY!! CATEGORY: RESEARCH PROPOSALS FOR $100,000

Thomas Haynes, Illinois State University, Normal, Illinois

3:00 pm - 3:30 pm **REFRESHMENTS** (Studio Foyer)

3:30 pm - 5:00 pm **RESEARCH REPORTS A** (Studio I)

Chairperson: David J. Hyslop, Bowling Green State University, Bowling Green, Ohio

EMPLOYER ASSESSMENTS OF STRENGTHS AND WEAKNESSES OF RECENT BUSINESS GRADUATES

This study examined employer opinions of strengths and weaknesses of business graduates hired during the past three years. A total of 176 personnel officers from a national sample responded to the survey. In contrast to the literature, the respondents expressed a high degree of overall satisfaction with recent business hires. Areas of highest dissatisfaction were advancement expectations, salary expectations, desktop publishing, writing skills, computer graphics, maturity and experience, and assessment of forces affecting the company.

Leslie J. Davison, St. Cloud State University, St. Cloud, Minnsota; James M. Brown, University of Minnesota, St. Paul, Minnesota; Mark L. Davison, University of Minnesota, Minneapolis

DISABILITY DISCLOSURE IN EMPLOYMENT COMMUNICATION: WHAT HUMAN RESOURCE MANAGERS ADVISE

This study analyzed responses from 195 human resource managers to determine disclosure preferences for six disability categories. Although analyses showed that respondents preferred direct disclosure methods, the specific method recommended by the majority was different from that cited in the literature.

Patricia A. Merrier, Linda E. Parry, and LeAne H. Rutherford, University of Minnesota, Duluth

RELATIONSHIP OF EMPLOYEE PERCEPTIONS OF WORK AND ADHERENCE/NONADHERENCE TO PROTESTANT WORK ETHIC AND CONTEMPORARY WORK VALUES

This research related employee perception of work to work values held. Multivariate analyses were conducted on data collected from 688 participants to relate their accepted definition of work and adherence or nonadherence to the Protestant Work Ethic and contemporary work values. Findings indicated that one's view of work can be a valid indicator of work values held. This information can be translated into behavioral characteristics employees are likely to exhibit.

F. Stanford Wayne, Southwest Missouri State University, Springfield, Missouri; Robert B. Mitchell, University of Arkansas at Little Rock, Little Rock, Arkansas

3:30 pm - 5:00 pm **RESEARCH REPORTS B** (Studio II)

Chairperson: Marguerite Shane Joyce, California State University, L.A., Los Angeles, California

THE OCCUPATIONAL PROFILE AND ON-THE-JOB EXPERIENCES/PERCEPTIONS OF OFFICE TECHNOLOGY ASSOCIATE DEGREE GRADUATES AND THE RESULTING CURRICULUM IMPLICATIONS

This study focused on graduates' perceptions of their experiences with the associate degree curriculum, current positions, and recommendations for curriculum development. Also presented will be employers' perceptions of needed curriculum and graduates' preparedness for the job. The session will close with implications for curriculum revision based on the analysis of the data gathered from both graduates and employers.

Shirley Barton, Kent State University Regional Campuses, Kent, Ohio; Alice Citano, Kent State University Ashtabula Campus, Ashtabula, Ohio

DEVELOPING AND TEACHING AN AUDITING COURSE IN THE 1990'S

This study analyzed the perceptions of auditing practitioners in public accounting firms regarding the content, teaching approach, and relevance of the college course in auditing to the needs of first-year staff auditors. National and local CPA firms within the Chicago area were surveyed and 465 usable responses

received. Survey results suggest that the college course in auditing requires substantial updating to better serve its objectives.

Howard A. Kanter, DePaul University, Chicago, Illinois

BUSINESS EDUCATORS' PERCEPTIONS ABOUT THE INTEGRATION OF BUSINESS EDUCATION AND ACADEMIC COURSES

The success of current efforts to integrate academics into business education depends on business teachers. However, little is known about their concerns, hopes, and needs regarding integration. This research analyzed the views of 138 Illinois business teachers. It focused on perceived benefits of integration, teachers' concerns related to integration, and what is needed to make integration succeed. Specific strategies for integrating academics into business education courses will be shared in the presentation.

Beryl C. McEwen, North Carolina A&T State University, Greensboro, North Carolina; Thaddeus McEwen, Eastern Illinois University, Charleston, Illinois; Marcia A. Anderson-Yates, Southern Illinois University at Carbondale, Carbondale, Illinois

3:30 pm - 5:00 pm **RESEARCH ASSISTANCE AND TRAINING** (Studio III)

Chairperson: Charles R. Hopkins, University of Minnesota, St. Paul, Minnesota

DPE PUBLICATIONS: WHO USES THEM?

Roger L. Luft and Larry Pagel, Eastern Illinois University, Charleston, Illinois

3:30 pm - 5:00 pm **RESEARCH ASSISTANCE AND TRAINING** (East Ballroom)

Chairperson: Brenda Baity, East Los Angeles College, Monterey Park, California

"THROUGH THE LOOKING GLASS" WITH QUALITATIVE RESEARCH METHODS: FROM FOCUS GROUPS TO AUTODRIVING AND BEYOND

Bruce Lammers, California State University, Northridge, Northridge, California

Saturday, November 14

8:30 am - 10:00 am **GENERAL SESSION III** (East Ballroom)

Chairperson: Marcia A. Anderson-Yates, Southern Illinois University, Carbondale, Illinois

WELCOME AND INTRODUCTIONS

Speaker: Alan Hardcastle, Research Coordinator, California Worksite Research Committee, Graduate School of Education, University of California at Los Angeles, Los Angeles, California

INDUSTRIAL ANTHROPOLOGY AND ETHNOGRAPHIC METHODS: EXPANDING THE RESEARCH TOOLBAG

In 1989 the California Worksite Research Committee, a bipartisan group of policy leaders from state government, business, organized labor and education, launched a three-year study of industrial restructuring in four California manufacturing firms: New United Motor Manufacturing, Inc. (NUMMI), USS-Posco Industries, Douglas Aircraft Company, and Hewlett-Packard. The committee's goal was to learn how state policy might be used to help strengthen California's eroding industrial base. The study sought to gain a fine-grained understanding of the different methods implemented by each company to improve product quality, productivity, and efficiency in response to competitive pressures for change. The UCLA research team used ethnographic methods in which researchers became participant-observers: Fieldworkers were trained and worked on production lines, interviewed workers and managers over several months, and used questionnaires, focus groups and feedback sessions to gain an 'insiders' perspective about the organization's culture and the conditions that impede or facilitate change.

ANNOUNCEMENTS

10:00 am - 10:30 am **REFRESHMENTS** (Great Hall)

10:30 am - 12 noon **RESEARCH REPORTS** (Studio I)

Chairperson: Delcia B. Sadler, Pittsburgh, Pennsylvania

A COMPARISON OF FACULTY'S AND BUSINESS EXECUTIVES' PERCEPTIONS CONCERNING THE IMPORTANCE OF BUSINESS COMMUNICATIONS TOPIC AREAS TO THE BUSINESS COMMUNICATION COURSE, THE DAILY ACTIVITIES OF A BUSINESS EXECUTIVE AND THE BUSINESS CURRICULUM

This study analyzed the perceptions of 92 Ohio University College of Business Faculty and 60 Ohio University College of Business Alumni concerning the importance of business communication topic areas to the daily activities of business executives and to the business communication course. The results of this survey study will be presented under two major headings: demo-

graphic data and perceptions. Conclusions from the research will be discussed.

Carl R. Bridges, Ohio University, Athens, Ohio

BUSINESS COMMUNICATION AS A DISCIPLINE: PERCEPTIONS OF BUSINESS SCHOOL DEANS AND PERSONNEL MANAGERS

Deans of American Assembly of Collegiate Schools of Business (AACSB) accredited schools and non-AACSB accredited schools were surveyed about their perceptions of business communication as a discipline. Data were gathered concerning institution size, number of majors, number of business communication classes, number of business communication faculty, faculty productivity, emphasis in the business communication course, and relevance of the business communication course. An open-ended question was asked about the perceived future direction of business communication. In addition, personnel managers were surveyed about the need for a business communication course as well as the communication preparation needed by entry-level workers.

Marguerite Shane Joyce and Carol Blaszczynski, California State University, Los Angeles

FOREIGN LANGUAGES AND INTERNATIONAL BUSINESS CORRESPONDENCE: PERSPECTIVES FROM THE BUSINESS COMMUNITIES OF TWO ENGLISH-SPEAKING NATIONS

Since English is widely regarded as the dominant language for international business purposes, an exploratory study examined the foreign language and international business correspondence perspectives of two English-speaking nations, the United States of America and the United Kingdom of Great Britain and Northern Ireland. Cross-cultural comparison of the languages used in outgoing and incoming international business correspondence, translation practices, recommended business foreign languages, importance of fluency in second and third business languages, percentages of employees fluent in second and third business languages, and the means of obtaining competency in second and third business languages will be presented.

James Calvert Scott, Utah State University, Logan, Utah;
Diana J. Green, Weber State University, Ogden, Utah

10:30 pm - 12 noon **RESEARCH ASSISTANCE AND TRAINING** (East Ballroom)

Chairperson: Carol Mitzner, Reseda High School, Reseda, California

TELEVISION INDUSTRY RESEARCH: THE NIELSEN WAY

Natalie Kahn, Vice President, Nielsen Media Research, Los Angeles, California

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12 noon - 1:30 pm **LUNCH** (unscheduled)

1:30 pm - 3:00 pm **RESEARCH REPORTS A** (Studio I)

Chairperson: Lyn R. Clark, Los Angeles Pierce College, Woodland Hills, California

SECRETARIES IN THE '90'S: WHICH SKILLS ARE IMPORTANT?

> To properly prepare secretarial students for employment in the 90's, educators should be aware of the perception of importance placed on secretarial skills by secretaries and personnel directors. The purpose of this study was to determine how secretaries and personnel directors perceived the importance of 20 selected skills related to the secretarial position and to determine if there are any significant differences in perceptions of importance between secretaries and personnel directors of the 20 selected skills.

Walter Creighton, Margaret Kilcoyne, and Julie McDonald, Northwestern State University, Natchitoches, Louisiana

DESKTOP PUBLISHING COMPETENCIES NEEDED IN THE BUSINESS WORLD

> The modified Delphi technique was used to identify the specific competencies needed to be successful in business positions that use desktop publishing. Ninety-four competencies and their levels of importance were identified by a panel of 30 experts. The 94 competencies identified had high consensus. Ninety competencies were determined to be of high priority; four were low priority. Desktop publishing experts are in general agreement concerning the competencies needed by individuals using desktop publishing in business.

Lonnie Echternacht and Paula Walker, University of Missouri at Columbia, Columbia, Missouri

ESTABLISHING ELECTRONIC KEYBOARDING SPEED AND ACCURACY STANDARDS FOR POSTSECONDARY TIMED WRITINGS WITH ERROR CORRECTION DURING THE INPUT PROCESS

> Business educators have used timed writings as a major component of instruction for decades. However, traditional speed and accuracy standards that do not allow error correction as part of the input process are not appropriate for today's technologically-oriented society. This study, therefore, was undertaken to update standards for speed and accuracy on straight-copy timed writings using electronic keyboards with error correction allowed during the input process at the postsecondary level.

Vivian Arnold and Randy L. Joyner, East Carolina University, Greenville, North Carolina; B. June Schmidt, Virginia Polytechnic Institute, Blacksburg, Virginia; Clarence D. White, Radford University, Radford, Virginia

1:30 pm - 3:00 pm **RESEARCH REPORTS B** (Studio II)

Chairperson: Brenda Ingram-Cotton, California State University, Northridge, Northridge, California

NONTECHNICAL COMPETENCY INSTRUCTION IN ILLINOIS SECONDARY AND POST SECONDARY BUSINESS EDUCATION COURSES

This study sought to determine the (1) nature of nontechnical competency instruction in Illinois secondary and postsecondary business education courses and (2) perception of business education instructors concerning their preparation to deliver nontechnical competency instruction. Data from over 100 respondents revealed that the degree to which nontechnical competencies are taught depends upon the type of business course. The lecture method is used most frequently while role playing and group projects are minimally used. Instructors indicated their preparation to teach nontechnical competencies came from their personal experiences.

Marcia A. Anderson-Yates, Mary J. Coffman, and Cora Mae Baker, Southern Illinois University, Carbondale, Illinois

THE CURRENT AND FUTURE STATUS OF BUSINESS RELATED CURRICULUM AT THE MIDDLE/JUNIOR HIGH SCHOOL LEVEL IN WASHINGTON STATE

Results of the survey indicated the majority of middle/junior high schools are not teaching business education curriculum courses. However, of those schools currently offering business curriculum courses, particularly, keyboarding, most do not employ business education teachers to instruct in these courses. Furthermore, keyboarding, microcomputer applications, and basic business courses were the primary courses taught. Demand for business curriculum and business teachers at middle/junior high schools will be increasing.

Catherine L. Bertelson, Central Washington University, Ellensburg, Washington

A STATUS REPORT ON THE INTERNATIONALIZING OF BUSINESS EDUCATION CURRICULUMS IN WISCONSIN SECONDARY SCHOOLS

The purpose of this research was to contribute to future business education curricula by determining the initiatives needed to internationalize the curriculum. Wisconsin secondary business educators were surveyed to obtain responses to questions regarding concepts, courses, resources, and methodologies used to internationalize the curriculum. A review of related research indicated that the infusion of international concepts into curricula is a critical issue for business educators; and survey results indicated that, while many schools are becoming involved, many more need to make globalization a relevant part of curriculum.

Sharon Esqueda, Brookfield Central High School; Nancy Krueger, Milwaukee Lutheran High School; Anita Weier, Hamilton-Sussex High School - members of Beta Theta Chapter, University of Wisconsin, Whitewater

1:30 pm - 3:00 pm **RESEARCH ASSISTANCE AND TRAINING** (Studio III)

Chairperson: Charles J. Inacker, Riverside Community College, Riverside, California

ANALYZING RESEARCH DATA

Scot Ober, Ball State University, Muncie, Indiana

3:00 pm - 3:30 pm **REFRESHMENTS** (Studio Foyer)

3:30 - 4:30 pm **GENERAL SESSION IV** (East Ballroom)

Chairperson: Marian McGorry, Community College of Philadelphia, Philadelphia, Pennsylvania

PRESENTATION FROM *ENTERPRISE LOS ANGELES*

Judith J. Lambrecht, University of Minnesota
Sharon Lund O'Neil, University of Houston
Carolee Sormunen, Ball State University
Annell L. Simcoe, Rutgers University
Richard Moore, California State University, Northridge
B. June Schmidt, Virginia Polytechnic Institute and State University

PRESENTATION OF BEST PAPER AWARD

ANNOUNCEMENTS

RESEARCH CONFERENCE BANQUET (Roof Garden)

6:00 pm - 7:00 pm	Social Hour
7:00 pm - 9:00 pm	Banquet Music from Hollywood by Jennifer Rea and Perry Hart
Host Chapters	* Psi Chapter, University of Southern California * Alpha Omicron Chapter, University of California at Los Angeles * Beta Pi Chapter, California State University, Los Angeles

ENTERPRISE LOS ANGELES

Judith J. Lambrecht, Coordinator, University of Minnesota
Sharon Lund O'Neil, Assistant Coordinator, University of Houston
Carolee Sormunen, Team Leader, Ball State University
Annell L. Simcoe, Team Leader, Rutgers University
Richard Moore, Team Leader, California State University-Northridge
B. June Schmidt, Team Leader, Virginia Polytechnic Institute and State University

Thursday - November 12, 1992

5:00 pm - 7:00 pm	**Enterprise Los Angeles Session I** (Studio IV) Welcome and introduction Conference overview and organization Developing a proposal/problem identification

Friday - November 13, 1992

8:00 am - 10:00 am	**Enterprise Los Angeles Session 2** (Studio IV) Research questions related to developing problem-solving skills Developing and administering questionnaires Developing and conducting interviews
10:00 am - 10:30 am	**Refreshment Break** (Great Hall)
10:30 am - 12:00 noon	**Enterprise Los Angeles Session 3** (Studio IV) Team meetings: Planning the research questions; making work assignments Planning the questionnaire Planning the interviews
1:30 pm - 3:00 pm	**Enterprise Los Angeles Session 4** (Studio IV) Team meetings Administer the questionnaire and key the data into the computer Conduct the interviews
3:00 pm - 3:30 pm	**Refreshment Break** (Studio Foyer)
3:30 pm - 5:00 pm	**Enterprise Los Angeles Session 4 (continued)** (Studio IV)
5:00 pm - 5:30 pm	**Enterprise Los Angeles Session 5** (Studio IV) Data-collection reports from two team leaders
7:00 pm - 8:30 pm	**Enterprise Los Angeles Session 6** (Studio IV) Analyzing data Using statistical-analysis software

8:30 pm - 8:45 pm **Refreshment Break** (Studio Foyer)

8:45 pm - 10:00 pm **Enterprise Los Angeles Session 7** (Studio IV)
Team meetings: Each group analyzing and writing up its part of the procedures and the findings for each subquestion or for the literature review

Saturday, November 14, 1992

8:00 am - 8:30 am **Enterprise Los Angeles Session 8** (Studio IV)
Data-analysis reports from three team leaders

3:30 pm - 4:30 pm **DPE Research Conference General Session IV** (East Ballroom)
Enterprise Los Angeles-Overview
Enterprise Los Angeles-Research Report
Wrap Up

Co-Hosts for Refreshment Breaks

1992 Research Conference

Alpha (New York University)
Alpha (Puerto Rico members)
Delta (University of Cincinnati)
Epsilon (Boston University)
Eta (University of Denver)
Lambda (Northwestern University)
Mu (University of Tennessee)
Pi (Ball State University)
Upsilon (University of Mississippi)
Phi (University of Minnesota)
Psi (University of Southern California)
Omega (George Peabody College)

Alpha Gamma (University of Houston)
Alpha Delta (Emporia State University)
Alpha Zeta (Temple University)
Alpha Lambda (Michigan State University)
Alpha Xi (Hunter College of CUNY)
Alpha Omicron (University of California, L.A.)
Alpha Sigma (Arizona State University)
Alpha Upsilon (University of Nebraska)
Alpha Phi (Northern Illinois University)
Alpha Chi (Rider College)
Alpha Psi (Mankato State University)

Beta Gamma (Virginia Polytechnic Institute & State University)
Beta Delta (University of Georgia)
Beta Epsilon (San Jose State University)
Beta Eta (Bowling Green State University)
Beta Theta (University of Wisconsin-Whitewater)
Beta Iota (Illinois State University)
Beta Kappa (Portland State University)
Beta Lambda (Shippensburg University of Pennsylvania)
Beta Nu (Utah State University)
Beta Omicron (Southern Illinois University-Carbondale)
Beta Pi (California State University, L.A.)
Beta Psi (Eastern Illinois University)

Gamma Alpha (Eastern Michigan University)
Gamma Gamma (Virginia Commonwealth University)
Gamma Theta (Arkansas State University)
Gamma Lambda (Western Kentucky University)
Gamma Pi (University of Arkansas)
Gamma Sigma (Central Michigan University)
Gamma Upsilon (Robert Morris College)
Gamma Chi (University of Missouri-Columbia)

PART I
REFEREED RESEARCH PAPERS

An Analysis of Computer Use By Four-Year University Faculty Members

Thomas B. Duff
Patricia A. Merrier
Linda K. Williams
University of Minnesota, Duluth

Abstract

This study reports how four-year university faculty use computers to support teaching and research activities. Findings indicate that 87% of 230 respondents use computers. Of those using computers to support teaching, 98% prepare student handouts and 50% manage gradebooks or other class records with them. To support research, 95% use computers to prepare final narratives, 72% to prepare tables or other summary data, 59% to complete data analysis, and 52% to conduct literature searches or retrievals. Use of the computer was related to gender, age, and total years teaching for those using it in research and to the latter two variables for those using it in teaching.

Introduction

Several studies related to the use of computers by business professionals have been reported in the literature in recent years. Some studies have reported on the type of equipment being used (Cook, et al., 1991; Crawford & Mitchell, 1988; Rhodes & Kupsch, 1988; Shah, Roderick & Buckner, 1990). In general, this research shows that many business professionals use both microcomputers and mainframe or central system computers and that computer networking is becoming more common.

Other studies have been identified that focus on the kinds of applications and types of software used by business professionals. Word processing, spreadsheet, database management, graphics, and accounting/financial planning software packages have been cited as being used most frequently, and the studies indicate that word processing and spreadsheet software are by far the most frequently used (Crawford & Mitchell, 1988; DeThomas, et al., 1991; Shah, Roderick & Buckner, 1990; Stitt, 1988; Wentling, 1988).

The previously cited studies provide information on the use of computers by administrative support personnel and professionals in small and large business firms, not-for-profit organizations, and units of government. Very little, however, is reported in the literature on the types of computer systems and how they are used by one relatively large group of professionals--college and university faculty. The articles reported in the literature focus primarily on studies conducted to determine how academics should integrate computers into instruction or offer suggestions on how they might do so (Jacobson & Armstrong, 1991; Javed, 1991; Lechter, 1990; Weida, 1991). Some studies report on testing instructional methodology in accounting (LaBonty, 1989) or in developing writing skills in business communications (Renchaw, 1991; Wedell & Allerheiligen, 1991).

Conducting instructional activities in the classroom, however, is only one part of a faculty member's teaching role. The computer may be used to support other parts of the teaching role and to support research activities of faculty members as well. This study was conducted to provide more detailed information about the type of computer equipment being used by college and university faculty members and how they use computers to support their teaching and research activities.

Purpose of the Study

The general purpose of this study was to determine how faculty members at a mid-sized, regional, comprehensive, four-year university use computers to support their teaching and research activities. More specifically, the study was conducted to answer the following questions about the faculty members on the campus involved:

1. What percentage of faculty members currently use computers to support their teaching and/or research activities?
2. What types of computers and operating systems do faculty members use?
3. What types of teaching activities do faculty members most frequently support by use of a computer?
4. What types of computer-based activities do faculty members require their students to complete?

5. What types of research activities do faculty members most frequently support by use of a computer?

6. Is there a difference between faculty members' use of computers to support their teaching and research activities based on gender, age, faculty rank, teaching field, year of completing highest degree, or years of teaching experience?

Procedures

A survey instrument designed to collect demographic data and to answer the specific questions posed by this study was prepared by the authors. The instrument was revised after being reviewed by a small group of faculty members from five of the six collegiate units on campus, by staff members from the information services unit on the campus, and by a faculty member recognized for his expertise in preparing survey instruments.

A cover letter and the survey instrument were sent to all 323 individuals classified as faculty members assigned to teach regularly scheduled courses at a regional, comprehensive, four-year university in the Midwest with a total student enrollment of approximately 8,000 students. The names and campus addresses of the faculty members were obtained from a data base provided by the office of the Vice Chancellor for Academic Administration at the campus. The survey instrument was distributed in the spring quarter during the month of April. Those receiving it were asked to complete and return it in an envelope addressed to one of the authors using the campus mail system. The requested return date was specifically identified; it was approximately two weeks from the date of distribution. One followup mailing was made to non-respondents three weeks after the initial mailing--one week after the requested return date identified in the initial mailing.

Responses on the returned survey instruments were coded and the data codes were keyed into a data file using the text editor for Edu-Stat, Statistical Software for Education, a microcomputer-based statistics package designed to accompany William G. Zikmund's *Business Research Methods*, 3rd Edition. The Edu-Stat software was used to find frequencies and to complete Chi-square analyses.

A total of 230 usable responses were received; a response rate of 71%. The demographic characteristics of the respondents are shown in Table I. As shown there, 71% of the respondents were over 40 years of age, 71% of them completed their highest degree in the 1970-1979 period, 65% of them have between 6 and 25 years of teaching experience, and 25% of them have more than 25 years of teaching experience. The percentage of female and male respondents, the percentage of respondents at each faculty rank, and the percentage of respondents from each of the six collegiate units on campus were compared to those percentages in the faculty population on the campus to determine whether the group of respondents was representative of the faculty population. Data for these characteristics of the campus faculty population were available from the Institutional Research Office on campus.

The percentage of females (27%) and males (73%) in the response group varies only slightly from the percentage of females (30%) and males (70%) in the campus population. The percentages of respondents from the rank of professor (31%) and associate professor (30%) compare closely to the percentages (28% and 33% respectively) of those ranks in the campus population. However, the percentage of assistant professor respondents (33%) is about one-third greater than the percentage (25%) in the population, and the percentage of instructor and other respondents (6%) is less than half of the percentage (13%) of this group in the population. Finally, the percentages of respondents from the each of the six collegiate units is very close to the percentage of the campus faculty population in each of them. The percentages of respondents from three of the units, Science and Engineering (29%), Liberal Arts (24%), and School of Medicine (11%), are the same as the percentages of the campus population in those units; and the percentage of respondents from each of the other units is within 1% of the faculty population in each of them.

Table I
Demographic Characteristics of Respondents (N=230)

A.	Gender	Female = 27% Male = 73%
B.	Age	Under 40 = 29% 40-50 = 39% Over 50 = 32%
C.	Faculty Rank	Professor = 31% Assistant Professor = 33% Associate Prof = 30% Instructor & Other = 6%
D.	Collegiate Unit Affiliation	Business & Economics = 10% Education & Human Services = 18% Fine Arts = 7% Liberal Arts = 24% Medical School = 11% Science & Engineering = 29% Other Units = 1%
E.	Year Degree Completed	Pre 1970 = 20% 1971-79 = 39% 1980-89 = 32% After 1989 = 9%
F.	Total Years Teaching Experience	5 or Less = 10% 6-15 = 36% 16-25 = 29% Over 25 = 25%

Findings

The first two questions to be answered by this study were:

1. What percentage of faculty members currently use computers to support their teaching and/or research activities?

2. What types of computers and operating systems do faculty members use?

A summary of the answers to these two questions is presented in Table 2. As shown, 201 (87%) of the 230 respondents in this study reported that they use microcomputers to support their teaching and/or research activities and 107 (53%) reported they used mainframe or central system computers to support such activities.

Table 2
Types of Computers and Operating Systems Used

A.	Respondents Using Microcomputers = 201	(87%)
	Using DOS & Some Other	63%
	Using DOS Only	37%
	Using Apple & Some Other	42%
	Using Apple Only	26%
	Using DOS & Apple Only	14%
B.	Respondents Using Central Systems = 107	(53%)
	Using Encore & Some Other	71%
	Using Encore Only	24%
	Using DEC VAX & Some Other	61%
	Using DEC VAX Only	22%
	Using Encore & VAX Only	28%

The reported use of specific types of microcomputer operating systems and mainframe computers in this study cannot be generalized to the broader population of faculty members at other campuses, of course. However, it is interesting to note that almost two-thirds (63%) of the respondents use DOS equipment, and approximately two-fifths (42%) use Apple equipment. Further, it appears that at least 25% of the respondents use more than one type of microcomputer equipment based on the fact that 37% of the respondents report using DOS only, while 63% report using DOS and some other equipment. As shown, 14% report using DOS and Apple only. On the campus where this study was completed, the Encore (UNIX) system is generally reserved for student and instructional use, while the DEC VAX system is reserved for research and administrative activities.

The third question to be answered by this study was: What types of teaching activities do faculty members most frequently support by use of a computer? As shown in Table 3, almost all (98%) of the respondents who indicated they use a computer use it to prepare student handouts. Exactly half of those using a computer reported using it to support managing gradebooks or other class records (50%), and about one-third use it to demonstrate software in classrooms (32%) and score tests and other assignments (31%).

Table 3
Percent of 201 Respondents Using a Computer Who Use It to Support Completion of Various Teaching Activities

Prepare student handouts	98%
Manage gradebook or other class records	50%
Demonstrate software in classroom	32%
Score tests and other student work	31%
Control in-class presentations	14%
Aid teaching activities other ways	35%

The fourth question to be answered by the study was: What types of computer-based activities do faculty members require their students to complete. Of the respondents reporting they use a computer, 49% indicated they had their students complete computer-based activities. The most frequently reported activity (43%) is the broad category of having students complete computer-based assignments. Less than 20% of the respondents reported having students do any other type of computer-based activity regularly.

The fifth question to be answered by the study was: What types of research activities do faculty members most frequently support by use of a computer? As shown in Table 4, almost all (95%) of the respondents who indicated they use a computer use it to prepare final narrative research reports. In addition, approximately three-fourths (72%) use the computer to prepare tables and other summary data; and about half use it to complete data/statistical analyses (59%), conduct literature searches or retrievals (52%), and for project management or similar activities (49%).

Table 4
Percent of 201 Respondents Using a Computer Who Use It to Support Completion of Various Research Activities

Prepare final narrative reports	95%
Prepare tables or other summary data	72%
Complete data/statistical analysis	59%
Conduct literature searches or retrieval	52%
Project management or similar activities	49%
Support research activities in other ways	32%

The final question to be answered by the study was: Is there a difference between faculty members' use of computers to sup-

port their teaching and research activities based on demographic characteristics. Chi-square analysis was used to determine whether the use of the computer to support teaching and research activities was independent of the respondent characteristics of gender, age, faculty rank, collegiate unit (used as a surrogate for teaching field in this study), year highest degree completed, and total years of teaching. Age, year highest degree completed, and total years of teaching were reported as a numerical value on the survey instrument by respondents. These values were then combined to create the categories shown earlier in Table 1. The categories ensure an expected frequency of no less than 5 in a cell to make the calculated Chi-square statistic valid.

The Chi-square value and probability for each of six demographic characteristics based on use of the computer to support teaching activities are reported in Table 5. As shown, use of the computer to support teaching activities is related to age and total years of teaching for the faculty members in this study. Older faculty members and those with more total years of teaching experience are less likely to use the computer to support teaching activities.

Table 5
Chi-Square Statistics for Faculty Characteristics and Use of Computer to Support Teaching Activities

Characteristic	df	Value	Probability
Gender	1	0.400	0.527
Age	2	13.389	0.001***
Faculty Rank	3	2.999	0.392
Collegiate Unit/Field	5	5.991	0.308
Year Degree Completed	3	5.735	0.126
Total Years Teaching	3	10.654	0.014*

The Chi-square value and probability for each of six demographic characteristics based on use of the computer to support research activities are reported in Table 6. As shown, use of the computer to support research activities is related to gender, age, and total years of teaching for the faculty members in this study. Females, older faculty members and those with more total years of teaching experience are less likely to use the computer to support teaching activities.

Table 6
Chi Square Statistics for Faculty Characteristics and Use of Computer to Support Research Activities

Characteristic	df	Value	Probability
Gender	1	3.867	0.049*
Age	2	10.544	0.005**
Faculty Rank	3	6.416	0.094
Collegiate Unit/Field	5	7.492	0.188
Year Degree Completed	3	7.349	0.062
Total Years Teaching	3	8.837	0.032*

Summary, Implications, and Recommendations

Summary

This study was conducted to provide more detailed information about the type of computer equipment being used by college and university faculty members, how they use computers to support their teaching and research activities, and to determine whether there is a relationship between demographic characteristics of faculty members and their use of computers. Data on computer use were collected from 230 faculty members (71% of faculty member population) at a four-year university with an enrollment of 8,000 students. The findings of the study apply specifically to the faculty members and their unique situation at the campus involved during the year of the study. However, the findings may be applicable to any population similar to that investigated for this study.

The findings indicate that 87% of the respondents use microcomputers to support teaching and research activities and 53% use mainframe or central system computers. DOS equipment is used by 63% of the respondents and Apple by 42%; further, at least 25% use more than one type of microcomputer equipment.

Almost all of the respondents use a computer to prepare student handouts (98%) and prepare final narrative research reports (95%). In addition, half or more of them use a computer to support managing gradebooks or other class records (50%) as part of teaching and to prepare tables and other summary data (72%), complete data or statistical analysis (59%), and conduct literature searches or retrieval (52%) as part of research.

Finally, respondents who are older and have more total years of teaching are less likely to use a computer to support teaching activities; and females and those who are older and have more total years of teaching are less likely to use a computer to support research activities.

Implications for Educators

First, the findings of this study indicate that faculty members are more likely to use microcomputers than mainframe computers and that they are most likely to use the computer to do activities requiring the use of word processing software. Therefore, those who provide training and education for faculty members at four-year universities should develop and offer programs designed to help faculty members become more productive users of word processing software on microcomputers.

Second, since faculty members report using the computer for managing gradebooks and other class records and completing data or statistical analyses on a relatively frequent basis, those providing training or education programs should develop and offer programs designed to acquaint faculty members who are not using computers to support these activities with the software and procedures available to be used in these areas. They should also consider offering programs to help those currently using a computer for these activities to become more productive users of current software or to become familiar with better software and procedures.

Third, since older faculty members with more years of teaching experience are less likely to use computers in their teaching and research activities, those providing training and education should consider ways to demonstrate the efficiency and effectiveness of using computers to older faculty members and non-threatening ways to encourage them to begin to use computers to support their work.

Recommendations for Further Research

The following recommendations for further research are based on the findings of this study:

1. A study should be conducted to determine whether the relatively high use of the microcomputer and word processing software by faculty members has changed the role of administrative support staff and/or secretarial help in departments or other administrative units at colleges and universities.

2. A study could be completed to determine the characteristics of the faculty members who are using mainframe or central system computers, why they are using them, and the specific types of software or applications they are using on them.

3. A study should be conducted to determine whether there is a difference between the type of teaching and research activities faculty members use a computer to support and their specific teaching field and/or the field of their highest degree. The broader collegiate unit category was used as a surrogate for teaching field in this study, but there are a variety of more specific teaching or subject fields in each collegiate unit.

4. A study could be completed to determine whether there is a relationship between faculty members' use of a computer and the quality of their teaching and/or the level of their research productivity.

5. Studies should be conducted to determine whether the findings from this study are comparable to what would be discovered if use of computers among elementary, secondary, and other post-secondary educators was investigated.

6. Finally, this study could be replicated at other four-year colleges or universities to determine whether the findings are similar and generalizable to a broader population than the faculty members at the campus where this study was completed.

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An Analysis of Undergraduate Coursework Completed by Prospective Business Teachers

B. June Schmidt
Curtis R. Finch
J. Dale Oliver
Virginia Polytechnic Institute & State University

Abstract

The coursework completed by 133 business teachers from 18 different institutions was examined. In addition, their coursework was compared with that completed by 299 vocational teachers from five other majors. From actual student transcripts, hours completed were coded in four broad categories: general studies, teaching major, education, and other. Further, within the categories additional breakdown of the hours was coded. For example, the general studies categories were mathematics and computer science; social science; science; English; and language, fine arts, other humanities, and philosophy. The procedures used in the study give an ex-post facto look at what the preparation of business teachers has been. Institutions with business teacher education programs can use the study outcomes as a basis for evaluating their own programs.

Introduction

Changes in society have had and continue to have great impact on education. Several examples of change include the increased need for basic skills competence in the workplace (Lotto, 1988), greater need for employees that are technologically literate (Rosenfeld, 1988), and increased enrollments of disadvantaged and handicapped students. These trends and needs as well as others have strong implications for business teacher preparation programs. A basic concern in this regard is how teacher education should be modified to insure that societal trends are addressed and needs are met.

This study focused on one such need; that of preparing business teachers to integrate basic academic skills content into their instruction. If teachers are to assume new roles in teaching academic skills (e.g., mathematics, reading, speaking, writing, and science) in their classrooms and laboratories, these professionals must have a reasonable exposure to key content areas as a part of their teacher preparation studies.

Objective

The primary objective of this research was to determine what courses business teachers complete during their university teacher preparation studies. More specifically, answers were sought to the following questions:

1. What types and amounts of coursework do prospective business teachers take as part of their teacher preparation (i.e., mathematics, science, English, pedagogy, social science, teaching major)?
2. How does the preparation of business teachers compare with that of other vocational teachers?

Method

Typically, any analysis of educational coursework is constrained by access to transcripts. National Center for Research in Vocational Education (NCRVE) researchers overcame this problem through close collaboration with the Southern Regional Education Board (SREB). The SREB is linked closely to states and universities in the southeastern United States and thus has access to many types of institutional information. Essentially, the methodology used in this study paralleled research conducted by SREB and funded by the National Endowment for the Humanities (Galambos, Cornett, & Spitler, 1985). The SREB study focused on an analysis of transcripts of arts and sciences teaching graduates and arts and science graduates. This study extends our knowledge about preparation for teaching through transcript analysis of vocational teacher education graduates. Data for business teachers were gathered as a part of the overall study which included study of five other teaching areas: agricultural, home economics, marketing, technology, and trade and industrial education.

Initially, SREB and NCRVE convened a steering group for the purpose of identifying potential universities to participate in the study and assisting in formulating more detailed research questions. The steering group consisted of education professionals in state departments of education, vocational teacher education programs, and local education agencies.

Data Collection and Analysis

From among SREB member states, institutions were identified that offered degrees leading to certification as vocational education teachers. Institutions producing the largest number of vocational education teachers were identified to serve as a pool from which participating institutions were chosen. From this pool, the largest producers of vocational teachers from each of the several subject areas were asked to participate. Additional institutions were then selected giving consideration to geographical representation, quantity of teachers produced, teaching area(s) teachers are prepared for, and a reasonable equal distribution of teachers produced by service area. Each institution was then contacted by SREB and asked to participate. Transcripts for 1988-1989 graduates were then obtained from each of the participating institutions.

A coding scheme was developed that took into account individual university courses in relation to general course groupings. This scheme was adapted from the earlier SREB study and based on input provided by the project steering group, information provided by individual institutions, and an examination of institution catalogs. After transcripts were examined and coded, relevant transcript information was entered onto computer disks for later analysis. From the 22 universities that participated in the overall study, 412 transcripts were analyzed and coded. Included were 133 business teacher transcripts from 18 universities.

Data were analyzed using standard statistical packages available for use with microcomputers. Means, ranges, and percentages were computed for courses taken in various categories (e.g., science, social science, mathematics) and by teaching area.

Findings

As shown in Table 1, the 133 prospective business teachers completed an average of 148.7 semester hours, which included 63.5 hours in general studies, 47.8 hours in the teaching major, 31.2 hours in education, and 6.2 hours in other coursework. On average, they had the highest total hours completed of any of the vocational teachers. In comparison to the others, their hours in general studies were the greatest. They exceeded the next highest general studies group, the home economics teachers, by 3.5 hours and the lowest general studies group, the trade and industrial teachers, by 8.4 hours. For teaching major hours, the prospective business teachers were ranked next to the lowest, with 3 hours more than the trade and industrial teachers and 7.9 hours less than the highest ranked agriculture teachers.

Table 2 contains information regarding credits by area earned in general studies along with information as to the percentage of

Table 1
Total Semester Hours Completed by Prospective Vocational Teachers in Major Areas of Preparation

		Semester Hours				
Major	N	General Studies	Teaching Major	Education	Other	Total
Agriculture	82	57.7	55.7	26.0	7.4	146.8
Business	133	63.5	47.8	31.2	6.2	148.7
Home Econ	63	60.0	53.3	26.5	7.8	147.6
Marketing	46	59.1	44.8	31.8	7.5	143.2
Technology	54	55.4	50.5	27.5	10.7	144.1
Trade and Industrial	34	55.1	49.1	25.9	10.5	140.6

teachers earning 12 or more credit hours in each area, including mathematics and computer science; social science; science; English; and language, fine arts, other humanities, and philosophy. The business teachers earned the most credits in math and computer science for the six teacher groups, an average of 10.3 with 39.1% of them earning 12 or more. For social science, the business teachers averaged the highest number of credits, 24.0 with 99.3% earning 12 or more. They also earned the highest number of credits for English, 12.5 with 73.7% earning 12 or more. For science the business teachers had fewer course hours than four of the other teacher groups, 8.8 hours with only 18.1% earning 12 or more credits. For language, fine arts, other humanities, and philosophy, the business teachers had fewer hours of coursework than four of the other teacher groups, 7.9 with 19.6% earning 12 or more credits.

The information in Table 3 provides insight as to the level of the courses completed in technical content. The business teachers followed the general pattern of other vocational teachers with slightly less lower level hours than upper level hours. They had 22.2 hours at the lower level, courses with numerical prefixes indicating that they were freshman or sophomore level courses, and 25.6 hours at the upper level, courses with numerical prefixes indicating that they were junior or senior level courses. Hours completed in various education courses as well as total hours in education are reported in Table 4. The 31.2 hours completed by the prospective business teachers were distributed as follows: 3.5 in general methods, 7.1 in teaching major methods, 10.5 in practicum and student teaching, and 10.7 in other. The other category includes courses in educational foundations and educational psychology. For the practicum and student teaching, the business teachers completed hours of coursework similar to the other vocational teachers. In the other three education coursework categories, they generally completed more hours than the other vocational teacher groups.

Table 2
Semester Hours Completed by Prospective Vocational Teachers in General Studies Areas

Area	Credits	% Earning at Least 12 Credits
Mathematics and Computer Science:		
Agriculture	7.9	12.2
Business	10.3	39.1
Home Economics	6.7	9.5
Marketing	7.9	17.4
Technology	7.6	9.3
Trade and Industrial	7.5	17.7
Social Science:		
Agriculture	15.9	85.4
Business	24.0	99.3
Home Economics	18.9	98.4
Marketing	24.4	100.0
Technology	18.2	88.9
Trade and Industrial	18.9	91.2
Science:		
Agriculture	15.5	79.3
Business	8.8	18.1
Home Economics	11.5	46.0
Marketing	7.6	4.4
Technology	9.3	24.1
Trade and Industrial	9.5	26.5
English:		
Agriculture	11.2	55.4
Business	12.5	73.7
Home Economics	13.0	66.7
Marketing	11.3	56.5
Technology	11.2	50.0
Trade and Industrial	9.9	26.5
Language, Fine Arts, Other Humanities and Philosophy:		
Agriculture	7.2	14.6
Business	7.9	19.6
Home Economics	9.9	25.4
Marketing	7.9	26.1
Technology	9.1	18.5
Trade and Industrial	9.3	26.5

Table 3
Semester Hours Completed in Technical Content at Lower[a] and Upper[b] Levels

Major	Level		Total
	Lower[a]	Upper[b]	
Agriculture	23.8	31.9	55.7
Business	22.2	25.6	47.8
Home Economics	24.7	28.6	53.3
Marketing	18.3	26.5	44.8
Technology	21.9	28.6	50.5
Trade and Industrial	28.3	20.8	49.1

[a] Lower level courses are those with numerical prefixes indicating that they are freshman and sophomore level courses.

[b] Upper level courses are those with numerical prefixes indicating that they are junior and senior level courses.

Table 4
Semester Hours Completed in Education

Major	General Methods[a]	Teaching Major Methods	Practicum and Student Teaching	Other[b]	Total
Agriculture	2.7	4.1	10.5	8.7	26.0
Business	3.5	7.1	10.5	10.7	31.2
Home Economics	2.5	4.2	11.2	11.2	26.5
Marketing	2.2	7.4	11.9	8.6	31.8
Technology	2.4	5.0	10.9	9.2	27.5
Trade and Industrial	1.7	6.0	10.7	7.5	25.9

[a]General methods courses are those not specific to vocational education.

[b]Includes courses in educational foundations and educational psychology.

Conclusions and Implications

The average hours completed by vocational teachers in all six majors exceeded the usual 126 semester hours required for graduation. The business teachers, with an average of 147.8 hours, completed the equivalent of four and one-half to five-year programs. They had extensive preparation in general studies, averaging 63.5 semester hours. Thus, their background knowledge for teaching academic skills in high school level business courses should be adequate. However, knowing the skills and being able to teach them to others are two different abilities. The real need may be for more emphasis in teacher preparation programs on how to incorporate academic skills instruction with business content instruction.

The only general coursework area where more hours of coursework may be appropriate for the business teachers is language, fine arts, other humanities, and philosophy. With the current world-wide workplace and economy, business teachers need to be well grounded in their knowledge of other cultures, including the ability to communicate in foreign languages.

Technical content hours completed by the business teachers, 47.8, represented 32%, or about one-third, of their total hours. Although a substantial portion of their preparation, further examination of the exact nature of these hours is desirable since business teachers must provide instruction in many diverse areas--ranging from basic business to the most advanced computer applications. Over half of the technical content courses were upper level, indicating that they would require the application of basic skills as well as technical skills at advanced levels.

The education hours completed ranged from 25.9 to 31.8 for the five vocational teacher groups. The business teachers averaged 31.2 hours in education, or 21% of their total of 148.7 hours. Devoting roughly one-fifth of their preparation for teaching to developing teaching skills seems, if anything, to be quite minimal. Further, 34% or roughly one-third of the education hours, were devoted to practicum and student teaching, or school-based experiences. An argument can readily be made to increase the methods of teaching hours if the coursework is used to help the teachers develop instructional competence for teaching basic academic skills as well as other workplace competencies. These skills and competencies are detailed in the Secretary's Commission on Achieving Necessary Skills report (1991), which addresses what work requires of schools.

The procedures used in this study give an ex-post facto look at what the preparation of business and other vocational teachers has been. The outcomes provide a basis for assessing how well the teachers have been prepared, thus, establishing a starting point for determining needed changes in coursework requirements. Further, institutions with business teacher education programs can use the study outcomes to determine how their own programs compare with those of the 18 business teacher preparation institutions included in the study.

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Business Educators' Perceptions Regarding the Integration of Business Education and Academic Courses

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Abstract

One hundred and thirty-eight Illinois business education teachers shared their perceptions regarding the integration of academics and business education. The study identified the benefits of integration, problems/concerns related to integration, support needed for integration efforts, and strategies for integrating academics into business education.

The study found the main benefits to be "improving preparation for work" and "improving problem-solving skills." The major concerns were "inadequate funding," "lack of resources for staff development," and "lack of leadership, in the schools, for integration efforts." The support most needed were financial resources, teaching resources, and inservice training. Suggested integration strategies include tutorials, team teaching, academic teachers as guest speakers, and using academic materials in keyboarding and shorthand classes.

Introduction

In recent years, strategies for integrating academic and vocational education have received increasing attention. According to Roegge (1992):

> No single topic in the vocational education arena is being more discussed, argued over, or written about today than the integration of academic and vocational education. (p. 84)

Vocational education is once again a national priority.

The concept of integrating academic and vocational education is not new. Business educators have been integrating academic skills into business courses for many years (Luft, Lingle, Graves, and Laux, 1991). Business education's strength has been its emphasis on both the specific competencies and the basic academic skills that guide occupational success (Littman, 1991). According to Lannie (1971), the concern for basic skills attainment to be a part of vocational education has a long history in America. He noted that colonial legislation emphasized dual responsibility for the master: to provide training in an occupation for useful employment, and to teach fundamental literacy. The importance of literacy skills for employment emerged as a specific concern of vocational education in the late 1960s. One of the needs of vocational education programs, addressed by the panel of consultants in 1963, was improvement in the basic skills of vocational education students (Haney & Woods, 1982).

Unfortunately, none of these early efforts to integrate academic and vocational education was successful (Grubb, Davis, Lum, Plihal, & Morgaine 1991). The current interest in integration, however, is different (Stasz & Grubb, 1991).

Current Interest in Integration

The main reasons for the current wave of interest in integrating academic and vocational education are: renewed emphasis on academic excellence advocated by the education reform reports, businesses' criticism of the "narrow vocationalism" of schools and the skill deficiencies of students, and vocational educators' criticism of the deficiencies of the academic curriculum (Grubb, et al., 1991; & Raizen, 1989).

In addition, there is the realization that the United States needs a new kind of worker to compete in the global economy. The National Business Education Association, in its publication "NBEA Keying In (March, 1992), noted:

> The new, more complex jobs of the future require workers who have the analytical thinking skills to solve problems, who can communicate well, who can read and understand what they have read, who have a firm grounding in English and math, and who can continue to learn as jobs continue to change. (p. 1)

This view was supported by Bailey (1991) who observed that jobs of the future will require not only more skill, but also more education. He noted that fewer opportunities now exist for workers who lack basic literacy and mathematical skills.

Another reason for the current interest in integration is the mismatch between job requirements and the skills of young people entering the workforce. According to Bernstein (cited in Luft, et al., 1991), the mismatch in skills is mostly in the students' abilities to read and interpret technical information, to write business letters and reports, and to use higher order thinking skills and apply them in decision making for the job on which they are working. The Committee for Economic Development (1985) declared "business, in general, is not interested in narrow vocationalism. They prefer a curriculum that stresses literacy and mathematical and problem solving skills" (p. 6).

Policymakers at the federal level also gave impetus to the integration efforts. The 1984 Carl Perkins Act emphasized the need for strengthening the academic foundation of vocational education (Pritz, 1988). The 1990 Amendments to the Carl Perkins Vocational and Applied Technology Act required programs supported with federal funds to "integrate academic and vocational education in such programs through coherent sequences of courses so that students achieve both academic and occupational competencies" (Section 235). The U. S. Department of Education also allocated $4.5 million in grants to be used for technical preparation projects involving work-related skills and academics (NBEA Keying In, March 1992).

Integration Efforts

Because of the various incentives for integration, several states (including Illinois) initiated statewide efforts to integrate vocational and academic education. Some invested in pilot projects while others launched comprehensive integration efforts (Grubb, et al., 1991).

Thirty schools associated with the Southern Regional Education Board formed the States' Vocational Education Consortium in collaboration with the National Center for Research in Vocational Education. The goal of the consortium was to improve the basic mathematics, science, and communication skills of general and vocational students (Bottoms & Preston, 1989). Curriculum development has also been initiated. Applied academics curricula and other materials to integrate basic skills into vocational courses are now available.

Illinois' Tech Prep Initiative

In Illinois, Tech Prep, including the integration of academic and vocational education, is one of the highest priorities of the State Board of Education (Illinois State Board of Education, 1992). According to Miguel, the Assistant Superintendent for Illinois State Board of Education Department of Vocational and Technical Education, (cited in Update, 1990)

> Tech Prep can be both the impetus for and the cornerstone of Vocational education reform during the next five years. It combines a common core of learning in mathematics, science, communications, and various technologies to bridge secondary level students with college and work. (p. 8)

The State's Plan for Vocational and Applied Technology Education in Illinois for fiscal years 1992-94 noted: "Tech Prep is the fastest growing area of vocational-technical education" (p. 16). In 1991 the State Board awarded planning grants to be jointly sponsored by 17 of the 39 community colleges and their respective secondary regional delivery system. An assessment conducted by the Illinois State Board of Education (ISBE) revealed that about 40% of the secondary schools and 61% of community colleges are involved in some form of Tech Prep activities. The goal for 1992 is to have 64% of secondary schools and 95% of community colleges involved in Tech Prep activities. By 1993, every secondary delivery system and community college district will have received a Tech Prep planning grant. The program target for 1994 is to have 50% of secondary regional delivery systems and community colleges deliver Tech Prep programs in at least one occupational area (ISBE, 1991).

Several staff development workshops were conducted throughout the state to assist vocational educators in recognizing the importance of integrating academic skills into vocational education. Similar staff development programs were also provided to academic teachers in an effort to assist them in incorporating practical approaches in teaching academic skills.

Role of Business Teachers in the Integration Movement

Business teachers play a major role in high school vocational education programs. According to a study by the National Center for Educational Statistics, (cited in Ober, 1989), business courses are offered in 99% of the nation's secondary schools. Each year 46% of all public secondary school students take at least one business course. On the other hand, Gray, (1991) reported that 32 states experienced declining enrollments in vocational subjects between 1984 and 1988. He noted that business education led the way in 13 of those states. Business educators, therefore, more than any other group of teachers, are likely to be actively involved in integration activities at the school level.

Success of the integration activities, depends on business teachers and other educators. They define the needs of students, develop new materials, revise off-the-shelf materials, create career path activities, and are responsible for carrying out changes in the schools. Successful integration of academic and vocational education will not take place simply from casual contact between business and academic teachers, nor from the legislative initiatives of state or federal government. Teachers must be convinced of the need for change and take the necessary steps to implement the change (Grubb et al., 1991).

Significance of the Study

Despite the importance of business teachers in the integration movement, research in the area, so far, has focused mainly on identifying various models of integration (Grubb, et al., 1991), and on differences in state policies on integration, (McDonnel and Zellman, forthcoming). The National Center for Research in Vocational Education has developed case studies of successful efforts in integrating vocational and academic education. Very little work has been done on the concerns, hopes, fears, and needs of teachers involved, in particular business teachers.

In a study on the implementation of the academic curricula in Illinois schools, Pepple, Law, and Valdez (1990) asked teachers how they selected and used applied academics packages in their courses and about their perceptions of advantages and disadvantages of the packages. However, no study was found dealing with business teachers' concerns about the various integration programs; the problems they are experiencing, their resource needs, and the benefits they perceive.

Stasz and Grubb (1991) noting the dearth of research involved in integration, recommended a study on the problems of the integration movement, and on the concerns and needs of teachers. Haynes, Law, Pepple and Valdez (1990) also called for Delta Pi Epsilon, the National Business Education Association, and the National Association of Business Teacher Education institutions to become more actively involved in integration activities and to conduct research and provide leadership to help business teachers develop the skills necessary to effectively carry out integration activities.

This study was an attempt to fill the information gap, and to present Illinois business educators' views about what is needed to make integration succeed. This study sought to provide useful information to policymakers and other teachers about the barriers and factors that facilitate integration of academic skills in business education. This information could also form the basis for the development of preservice and inservice training to increase the effectiveness of business teachers involved in integration efforts.

Purpose of Study and Research Questions

The purpose of the study was to determine the perceptions of Illinois business education teachers about the integration of business education and academic subjects in the curriculum. The study focused on the benefits of integration, problems/concerns related to integration, support needed for integration efforts, and teaching strategies for integrating academics in the teaching of business education courses.

The problem investigated was: What are the perceptions of Illinois business education teachers concerning the integration of business education and academic subjects in the curriculum? Answers were sought for the following research questions:

1. What do business education teachers perceive to be the benefits of integrating academic and business education courses?

2. What are the major concerns of business education teachers regarding the integration of academic and business education courses?

3. What kinds of support will business education teachers need to participate in the integration of academic and business education courses?

4. What specific strategies could business education teachers use to integrate the teaching of academics in business education classes?

Methodology

The study used the descriptive research design and conducted a mail survey. The population of the study was high school and community college business instructors in Illinois. Based on the method suggested by Wunsch (1986), a random sample of 200 high school teachers and 170 community college instructors were identified. A table of random numbers was used to select the sample from a list provided by the State Board of Education.

The questionnaire used to collect the data was designed by the researchers, reviewed by the Delta Pi Epsilon, Beta Omicron Chapter Executive Board (1991-1992), and piloted with business education teachers from Southern Illinois. The questionnaire collected basic demographic data which was used to describe the sample. Through the use of three Likert-type scales, respondents were able to give their perceptions of: (a) The benefits of integration, (b) Problems/concerns related to integration, and (c) Support needed for integration efforts. Through an open-ended question, respondents were also able to share teaching strategies which can be used in integration efforts.

The demographic data were analyzed using frequencies and relative frequencies. Data collected through the Likert-type scales were analyzed with means and standard deviations.

Findings

The findings of the study are presented in four sections: Benefits of Integration, Problem/Concerns Related to Integration, Support Needed for Integration, and Strategies for Integration. It begins with a description of the respondents.

Demographic Data

The demographic composition of the sample was 32.6% community college and 67.4% high school instructors. One-third (33.3%) were males and two-thirds (66.7%) were females. Over 75% of the respondents are between 35 and 54 years old. Most (68.8%) of the respondents are at the master's degree level. Another 5% have specialists' and doctorate degrees. Over 40%

of the respondents have been teaching for over 20 years. Six percent have been teaching for fewer than five years.

Keyboarding is the course most widely taught by the respondents (53.6%), followed by accounting (37%). Most respondents teach between 46 to 50 minutes per class period.

Twenty-five (55%) of the community college respondents stated that their schools were involved in projects which support integration as compared to 26 (28%) of high school respondents. Of those teachers whose schools were involved in integration-related projects 45 percent were personally involved. This represents only 17 percent of the total respondents. Most people were involved with Tech Prep projects.

Benefits of Integration

Table 1 lists, in descending order, the benefits that respondents expect to result from the integration of academics into the teaching of business education courses. Means and standard deviations are shown for the overall group as well as for two subgroups: community college instructors and high school teachers.

Respondents seemed to be somewhat uncertain about the real benefits which will come from integrating the teaching of academic and business subjects. This is suggested by the many items in the scale which received a score of more than 3 but less than 4. They, however, believe that integration will improve preparation for work as well as preparation for further education. They are most uncertain about whether it will increase enrollment in business courses or increase high school retention rates.

High school and community college teachers held similar views about the benefits of integrating academics into business education. Both groups rated "improved academic and problem solving skills" as the most important benefit.

Table 1
Perceived Benefits of Integrating Academics and Business Education Courses

Benefits	Overall[a] Mean	S.D.	Community College[b] Mean	S. D.	High School[c] Mean	S.D.
Improves preparation for work	4.26	.79	4.27	.74	4.23	.84
Improves academic and problem solving skills	4.25	.63	4.28	.65	4.25	.63
Improves preparation for further education	4.20	.67	4.17	.64	4.15	.71
Provides variety in classroom instruction	4.17	.64	4.19	.69	4.15	.61
Helps academic and business teachers to work together	4.17	.69	4.18	.78	4.17	.65
Upgrades the content of the curriculum	4.04	.72	3.88	.86	4.09	.69
Improves the coherence of the curriculum	3.97	.66	3.83	.64	4.00	.68
Reduces segregation of academic and business students	3.97	.81	3.89	.84	4.03	.76
Increases academic content in business subjects	3.90	.78	3.83	.87	3.89	.82
Improves performance in business subjects	3.78	.70	3.84	.59	3.86	.74
Improves the teaching of academic courses	3.76	.75	3.95	.74	3.72	.81
Improves the teaching of business courses	3.73	.77	3.80	.72	3.72	.81
Increases the rigor of business courses	3.58	.83	3.70	.81	3.58	.80
Increases enrollment in business courses	3.51	.76	3.34	.74	3.66	.77
Increases retention rate in high schools	3.43	.74	3.34	.74	3.51	.77

[a] n = 138
[b] n = 45
[c] n = 93

These findings are consistent with those of Bailey (1990) whose research for the National Center for Research in Vocational Education found that integration will better prepare students for work and will serve as a good educational base for students planning to enter higher education. Benson (1989) also found that integration fosters understanding between academic and vocational teachers, as a result of working together on new curricula.

Those respondents currently involved with projects which support integration also see some additional potential benefits. Their perceptions of the potential benefits are shown in Table 2.

Table 2
Perceived Benefits of Integrating Academic and Business Education Courses as Perceived by Teachers Who Are Currently Involved in Projects which Support Integration

Benefits	Overall[a] Mean	S.D.	Community College[b] Mean	S.D.	High School[c] Mean	S.D.
Helps academic and business teachers to work together	4.21	.65	4.36	.77	4.08	.49
Improves academic and problem solving skills	4.21	.65	4.36	.64	4.08	.64
Improves preparation for work	4.21	.65	4.36	.64	4.08	.64
Improves the coherence of the curriculum	4.17	.56	4.18	.57	4.16	.55
Improves preparation for further education	4.13	.61	4.18	.57	4.08	.64
Provides variety in classroom instruction	4.08	.65	4.09	.79	4.08	.49
Upgrades the content of the curriculum	4.08	.82	4.00	.95	4.16	.68
Improves the teaching of academic courses	4.04	.62	4.27	.61	3.83	.55
Improves the teaching of business courses	4.00	.72	4.09	.79	3.91	.64
Reduces segregation of academic and business students	4.00	.83	3.90	.99	4.08	.64
Improves performance in business subjects	3.86	.67	4.00	.73	3.75	.59
Increases academic content in business subjects	3.78	.97	3.72	1.05	3.83	.89
Increases the rigor of business courses	3.69	.74	3.81	.93	3.58	.49
Increases enrollment in business courses	3.60	.87	3.54	.98	3.66	.74
Increases retention rate in high schools	3.56	.87	3.45	.98	3.66	.74

[a]n = 23
[b]n = 11
[c]n = 12

It can be seen that, with slight shifts in rank order, respondents who are currently involved in integration projects perceived the same benefits as the larger group of respondents. The potential benefits fall in the general themes of improved preparation for work and for further education, and improved relationships between academic teachers and students and business teachers and students.

Problems/Concerns Related to Integration

Table 3 presents the concerns that respondents have regarding the integration of business and academic courses. "Inadequate funding for integration efforts" topped the list, followed by "Lack of resources for staff development." Based on the means, all of which are below 4.0, these are not considered to be serious problems. A mean of 4.0 or higher would suggest that respondents agree that the items in the scale represent areas of problems or concerns.

Several of the items received scores of less than 3.0 which further suggests that respondents disagree that such items represent problems or concerns. The respondents disagreed that "Inability to teach academic subjects" is a concern. They also disagreed that there is concern that "Academic teachers will dominate business teacher" or that "Low academic level of business students" will affect their ability to cope with academic content.

Table 3
Perceived Problems and Concerns Related to Integrating Academics and Business Education Courses

Problems and Concerns	Overall[a] Mean	S.D.	Community College[b] Mean	S.D.	High School[c] Mean	S.D.
Inadequate funding for integration efforts	3.73	.83	3.67	.85	3.85	.83
Lack of resources for staff development	3.60	.85	3.46	.93	3.83	.79
Lack of leadership in the schools for integration efforts	3.60	.98	3.45	1.00	3.72	.97
Lack of appropriate instruments for assessment	3.57	.84	3.56	.75	3.60	.91
Lack of appropriate textbooks	3.45	.91	3.16	1.09	3.66	.77
Teachers' (business and academic) unwillingness to change	3.45	.97	3.46	.93	3.42	.97
Lack of curriculum materials	3.40	.92	3.07	1.14	3.51	.99
Lack of cooperation between academic and business teachers	3.27	1.00	3.29	1.04	3.25	.98
Insufficient time in the school day	3.17	1.08	3.06	1.14	3.51	.99
Lack of student interest in integrated content	3.00	.90	3.18	.85	2.88	.95
Lack of teacher interest in integrated content	2.96	.97	2.95	.97	2.95	1.00
Fear of business subjects being taken over by academic teachers	2.88	1.02	2.70	1.04	2.97	1.05
Integration will require too much additional work	2.88	.91	2.77	1.00	2.89	.91
Low academic level of business students	2.73	.98	2.81	.95	2.78	1.05
Fear of losing job	2.70	.96	2.69	1.00	2.62	.94
Academic teachers will dominate business teachers	2.67	.94	2.47	.91	2.89	.98
Inability to teach academic subjects	2.38	.79	2.45	.83	2.29	.76

[a] n = 138
[b] n = 45
[c] n = 93

These findings compare well with those of Benson (1989). He listed some of the major barriers to integration as: lack of resources for staff development, inadequate funding and leadership in schools, and the absence of appropriate instruments of assessment.

However, these findings are not consistent with the concerns identified by Pritz and Crowe (1987). The concerns they identified for vocational and academic teachers included job security, loss of control over their classes, and time to participate in integration activities. But, the findings of this study, that business teachers are not concerned about their ability to teach academic content is in line with that of Pepple, Law, and Valdez (1990). They found that vocational teachers in Illinois were comfortable teaching applied communication and applied mathematics.

Respondents who were involved in projects which support integration were most concerned about: "Teachers' (business and academic) unwillingness to change." Their other concerns were similar to those of the overall group of respondents as shown in Table 4. This subgroup, like the larger group of respondents, disagreed that "inability to teach academic subjects" was a concern.

Table 4
Problems and Concerns Related to Integrating Academics and Business Education Courses as Perceived by Respondents Involved in Projects which Support Integration

Problems and Concerns	Overall[a] Mean	S.D.	Community College[b] Mean	S.D.	High School[c] Mean	S.D.
Teachers' (business and academic) unwillingness to change	3.65	.86	3.81	.93	3.50	.76
Inadequate funding for integration efforts	3.60	.96	3.27	.96	3.91	.86
Lack of resources for staff development	3.60	.92	3.27	.95	3.58	.86
Lack of appropriate instruments for assessment	3.52	.92	3.45	.78	3.58	1.03
Lack of cooperation between academic and businessteachers	3.47	1.05	3.36	1.22	3.58	.86
Lack of leadership in the schools for integration efforts	3.30	1.18	3.00	.95	3.58	1.18
Insufficient time in the school day	3.26	1.22	3.45	1.23	3.08	1.18
Lack of curriculum materials	3.21	1.01	3.18	1.19	3.25	.82
Lack of appropriate textbooks	3.17	.91	3.18	1.02	3.16	.79
Fear of business subjects being taken over by academic teachers	3.17	.91	3.09	.99	3.25	.82
Lack of teacher interest in integrated content	2.82	.86	3.00	.85	2.66	.84
Fear of losing job	2.82	.96	3.18	1.11	2.50	.64
Lack of student interest in integrated content	2.78	.77	2.90	.79	2.66	.74
Integration will require too much additional work	2.73	.79	2.81	.83	2.66	.74
Academic teachers will dominate business teachers	2.69	.80	2.72	.86	2.66	.74
Low academic level of business students	2.60	.87	2.54	.98	2.66	.74
Inability to teach academic subjects	2.34	.75	2.18	.71	2.50	.76

[a]n = 23
[b]n = 11
[c]n = 12

The main concern of community college teachers was "teachers unwillingness to change. High school teachers, however, were most concerned about "inadequate funding for integration efforts."

Support Needed for Integration

Financial resources, teaching resources, inservice training, more planning time, and more resource personnel are all needed but, as shown in Table 5, the priority is financial resources.

Table 5
Support Needed for Integration Efforts

Support Needed	Overall[a] Mean	S.D.	Community College[b] Mean	S.D.	High School[c] Mean	S.D.
Financial resources	4.38	.79	4.35	.87	4.51	.66
Teaching resource materials	4.33	.67	4.26	.77	4.40	.65
Inservice Training	4.28	.63	4.21	.59	4.29	.70
More planning time	4.25	.68	4.18	.59	4.26	.77
Resource persons	4.12	.74	4.10	.58	4.17	.81
Academic teacher-partner for team teaching	3.88	.82	3.79	.87	3.92	.79
Longer teaching periods	2.92	1.01	2.82	1.01	3.11	1.02
Shorter teaching periods	2.33	.76	2.37	.76	2.26	.79

[a]n = 138
[b]n = 45
[c]n = 93

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Both the total group of respondents and the sub-group, representing those respondents who were involved in integration-related projects rated the support needed in exactly the same way. The priority is financial resources. Neither group can see any special advantages to having shorter, or even longer teaching periods.

Strategies for Integration

Several suggestions were made for incorporating the teaching of mathematics, English, writing, reading, and other academic content into business education courses. The following lists present the main ideas.

List 1:
Strategies for Teaching Mathematics in Business Education Courses

Teach math skills in business courses, for example:

1. Use math tutorials with accounting students who have weak math skills.
2. Calculate margins, columns, centering, etc. in keyboarding.
3. Prepare budgets and keep accurate records of spending in consumer education classes.
4. Teach formula construction in Lotus 1-2-3 or other spreadsheet course.
5. Calculate interest on loans in record keeping classes.
6. Calculate depreciation and various ratios (financial statements analyses) in accounting.
7. Use word problems in consumer math classes.
8. Include math skills when teaching calculator techniques in office procedures.
9. Review mathematical principles when doing simulations in information processing.

Math skills can also be incorporated into the teaching of retailing, programming, marketing, and introduction to business or general business.

List 2:
Strategies for Teaching Writing in Business Education Courses

1. Write papers in business law.
2. Do article summaries related to the course material, for example computer-related articles.
3. Give more essay questions and grade on grammar as well as content.
4. Use more essay and short-answer questions on tests.
5. Use written cases in Business Law, Introduction to Business, and Personnel classes.
6. Write business letters in Typing classes.
7. Prepare written reports in information processing.

Several respondents suggested that students be required to write related career papers in each business education course.

List 3:
Strategies for Teaching English Language in Business Education Classes

1. Include grammar and spelling in Shorthand and Word Processing.
2. Stress grammar in Business Communication.
3. Require correct grammar, sentence structure, and spelling in all writing.
4. Require that students keep a vocabulary notebook.
5. Use word processors to prepare English assignments.

Assigning business-related term papers in English classes was also suggested by several people.

List 4:
Strategies for Teaching Reading in Business Education Classes

1. Encourage student to read for pleasure, and provide some class time for this.
2. Assign reading activities.
3. Give assignments which require library research.
4. Improve reading levels by including personal typing in keyboarding classes.
5. Implement a sustained reading program.

List 5:
Other Suggestions for Incorporating Academics into Business Education Classes

1. Teach economics and social studies in consumer education classes.

2. Include current issues such as politics, economics, and ethics in accounting, management, finance, and business law classes.

3. Have students develop a business plan and insist on correct grammar, spelling, and sentence construction for the proposal. Emphasize correct mathematics for the financial statements.

4. Include geography in international business classes.

5. Include geography when teaching two-letter initials for state names.

6. Set aside blocks of time in business classes to teach short units on math and English.

7. Team-teach with academic teachers.

8. Invite academic teachers as guest-instructors in business classes.

9. Use data bases to organize and summarize findings for research projects in academic areas, such as science and social studies.

10. Become active in "Constitution Day" activities presented through the social studies program.

11. Work with science and technology classes on marketing new products.

12. Teach the various time zones as they relate to such things as business calls.

13. Use academic materials for keyboarding drills.

14. Design test questions that require higher-level thinking skills.

15. Use materials that enhance cultural literacy, in keyboarding and shorthand classes.

Conclusions

Several conclusions were drawn from the results of this study:

1. Integrating academics and business education courses can be very beneficial, both by improving the quality of graduates and by improving the relationships between academic and business teachers.

2. No distinctly negative results are expected from integrating academic and business education courses, however, it is not expected to be a panacea. For example, it is expected to have little impact on such areas as high school retention rates, and increased enrollment in business courses.

3. Illinois business education teachers (represented in this study) are very comfortable with efforts being made to integrate academics into business education courses. They have no major concerns nor do they foresee any major problems. What little concern there is, relates mainly to funding and staff development, and commitment from administration and school counselors.

4. The business teachers represented in the study are very confident about their ability to teach academic content. They harbor no fear that their academic counterparts will dominate them or usurp their positions. There is also no chronic fear of losing their jobs or that their students will not be interested in, or able to cope with academic content.

5. Financial support is most urgently needed for integration efforts. Support in the areas of teaching resource materials, and staff development are also important.

6. No major adjustment is needed in the length of teaching periods. Neither longer teaching periods nor shorter teaching periods is considered by the teachers to be important areas of support. However, resource persons and/or teacher-partners could be helpful.

7. It is important to incorporate academic content into business education courses without creating additional class periods or additional courses. The suggestions given predominantly focused on finding ways to mention or stress academics as regular business content is taught.

8. The opinions of teachers who are involved in projects which support integration are very consistent with those of the total group, although they account for only 17% of the total number of respondents.

Recommendations

The following recommendations were made, based on the findings and conclusions of this study:

1. Efforts should be made to widely encourage business education teachers to begin to integrate academic content into their classes. Both those teachers who are involved with such projects as Tech Prep, which encourage integration, and those who are not involved should be encouraged to incorporate academic content as they teach traditional business subjects such as keyboarding and accounting.

2. Stronger efforts should also be made to involve academic teachers in integration. Linkages need to be made between business teachers and their academic counterparts so that they

can become more involved in team teaching activities and act as teacher-partners or even guest speakers in each other's classes.

3. Guidance counselors need to be made more aware of the values and benefits of business content, both for work and for higher education. Their support needs to be harnessed so that all students who are interested in business courses will be encouraged to take them, with the assurance that not just their business skills but also their academic skills will be improved.

4. Professional development workshops as well as resource development teams can be organized to provide some of the support needed for integration efforts. It would also be helpful to work with teachers or team leaders to help them to develop grant-writing skills so that more people are able to prepare proposals for funding. Financing for integration efforts was high on the list of support needed.

5. Forums need to be provided so that teachers are able to learn from each other, some of the successful strategies for integrating the teaching of academics in business courses. Maybe, once each semester, teachers who have had some successes could be asked to meet with their interested colleagues for a sharing session. Both ideas and materials could be shared.

6. Vocational/academic integration should be made a part of all teacher education programs.

Additionally, the following recommendations were made for further research.

1. Tracer studies are needed of programs or individuals (instructors and their classes) who are making efforts to integrate academics into business courses. Some focus should be given to:

   a. specific successful strategies,

   b. impact on student learning,

   c. long-term benefits to students (e.g. job performance or performance in higher education), and

   d. growth of the specific programs.

2. A study is also needed to find out exactly what efforts and what programs are currently underway to push integration efforts in the state. This will be able to underscore areas of need and areas of possible overlap. Also, successful efforts could be documented and shared.

3. A qualitative study which documents, in some detail, the efforts of teachers who are currently integrating academic content in their business courses and those academic teachers who are currently integrating business content into their courses, could produce a resource guide which many may find useful. Maybe funding could be found for such a project.

4. A similar study should be conducted focusing on the perceptions of academic teachers.

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Collaboration in Business Writing: Strengths and Weaknesses as Perceived by Selected College Students

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Abstract

The primary purpose of this study was to determine the strengths and weaknesses of collaborative writing projects as perceived by selected collegiate students. Sixty junior and senior business majors enrolled in required business writing courses served as the population for this study. After the students completed the collaborative writing project, the Nominal Group Technique was used to identify and rank the students' perceived strengths and weaknesses of collaborative writing. A short questionnaire was also completed by members of the population. The findings support the premise that students recognize the strengths of collaborative writing assignments and react favorably to such assignments. The findings further reveal that students recognize weaknesses which are inherent in collaborative writing endeavors and need assistance in overcoming such weaknesses.

Introduction

Collaboration is a buzz word in almost all functional and support areas of today's business curriculum. While the group process has received increased emphasis in workplace settings, less attention has been devoted to group endeavors in courses designed to assist students in developing and refining writing competencies. As recently as 1983, Fleming (p. 4) asked, ``Why do we hear so little in the academic world about group writing when so much of the writing in the world outside is a collaborative effort?'' Since that time, numerous articles, some research-based and others theoretical discourses, have appeared in the professional literature.

Some investigators have sought to determine how frequently team writing occurs in business, government, and industry. Lunsford and Ede (1986) learned that nearly nine out of ten business professionals sometimes write as part of a team (p. 71). Others have suggested that collaborative writing is virtually the *modus operandi* in the production of large business documents. Barbour (1990), for example, found that technical writers, product analysts, and mid-level managers reported that all but the smallest projects were produced collaboratively.

Another concern of researchers has been the type of business writing that is likely to be pursued by groups. Bacon (1990) stated that proposal development in business and industry is usually a collaboration effort (p. 4). Easton *et. al.* (1990) suggested that collaboration occurs for writing short documents, such as memos, letters, information briefs, or press releases or for writing longer documents, such as reports or policy and procedure statements (p. 34).

Nelson and Smith (1990) viewed the complexities encountered by writing groups in an attempt to provide guidelines for maximizing cohesion and minimizing conflict in collaborative writing groups (p. 59). Others have studied various facets of collaborative writing groups. Morgan *et. al.* (1987) reported that groups of three or four may be the optimum size for successful writing teams. Brilhart (1986) studied the frequency of interaction among group members. Wilson and Hanna (1986) identified sources of conflict, such as the inability of a participant to establish informal group leadership, dissatisfaction with tasks, a perception of unequal time commitments, and a perception of the inefficient use of time. Roger (1975) found that groups do not critically examine the work of individual members for fear of insulting or offending the group member(s) (p. 132). Avoiding conflict may, however, allow dissatisfaction to grow and cause the conflict to become increasingly dysfunctional (Chan, 1989). When a project nears completion, Nelson and Smith (1990) believe that a group may become task-oriented and avoid frequent interaction while sustained interaction would minimize conflict (p. 62).

Chan (1988) argues that although benefits and problems in collaborative learning, as well as techniques for facilitating it, have been extensively discussed in recent publications on composition teaching, few detailed descriptions of actual classroom uses of collaborative learning have been published. While this study does not provide a detailed description of collaborative learning, it does contain an examination of a collaborative endeavor from the students' viewpoints.

Purpose and Objectives of the Study

The primary purpose of this study was to determine the strengths and weaknesses of collaborative writing projects as perceived by selected college students. As a result of this activity, the investigator also achieved the following objectives:

1. Identified students' reactions to the collaborative approach in terms of the following characteristics:
   a. generating a variety of ideas or potential solutions;
   b. organizing and phrasing the content of the message;
   c. examining critically the contents of the message for clarity, grammar, punctuation, sentence structure, and other quality measures;
   d. saving time and culminating in a cost-effective endeavor.
2. Identified students' reactions to a group endeavor as opposed to an individual endeavor in terms of the effectiveness of the end-product.
3. Identified students' reaction to problems which may be encountered during collaborative endeavors such as domination of the discussion by one or more individuals and the degree to which the finished product represented a consensus of opinions.

The primary research questions were, "What do you perceive to be the strengths of the collaborative writing assignment? What do you perceive to be the weaknesses of the collaborative writing assignment?" The student participants also responded to a short questionnaire designed to elicit their reactions as related to the above objectives.

Delimitations of Study

Only students attending Illinois State University and majoring in the College of Business, Fall Semester 1991, were participants. Furthermore, the student participants were enrolled in two sections of Business Report Writing from among the twelve sections offered. Thus, it should be recognized that the participants were not representative of the population as a whole but are likely to be representative of business school undergraduates from large AACSB-accredited midwestern, university business schools or colleges.

Methods and Procedures

The Nominal Group Technique (NGT) was used to gather information for this study. The NGT, in recent years, has become popular as a research tool, especially when the beliefs of several individuals must be clarified and aggregated into a judgment or decision that reflects group consensus.

Research Population and Participant Selection

The population for this study included sixty junior and senior business majors at Illinois State University. The students were enrolled in two sections of Business Report Writing, a required course for all business majors. The two sections were taught by the investigator during the Fall Semester, 1991. Each section was composed of 30 students, the maximum number permitted to register per section. Students were divided into groups of six, resulting in five groups per section or ten total groups.

The Assignment

The assignment was a problem that required the group to examine a number of alternatives, project the probable consequences of each alternative and, ultimately, reach a decision based on group consensus. Each self-directed group then decided how to prepare a written document, assigned tasks, combined the products, reviewed and refined the final document, and submitted it for evaluation. Following the submission of papers, the investigator introduced the NGT for the purpose of data collection.

Data Collection

The NGT developed by Delbecq and Van de Ven in 1968 was the procedure used to identify and, subsequently, rank-order the strengths and weaknesses. The NGT, as applied in this study, involved the following steps: (1) introduction to the meeting, (2) independent and silent generation of perceived strengths and perceived weaknesses in writing, (3) round-robin listing of all of the perceived strengths and weaknesses as recorded by each group member, (4) group discussion of the collective perceived strengths and weaknesses for clarification and mutual understanding, and (5) independent voting on the priority of the perceived strengths and weaknesses to mathematically determine a group rating. After the independent groups completed the ranking process, they were assembled into one large group to rank the top eight strengths and weaknesses of each group. The steps, as clarified below, were followed in the data collection process.

Introduction to the Meeting. The facilitator welcomed the participants and emphasized the importance of the study as well as the importance of each participant's contribution. The participants, from each section, were divided into five groups, each containing six members. The following questions were then presented: What do you perceive to be the strengths of a collaborative assignment that culminates in a written document? What do you perceive to be the weaknesses of a collaborative assignment that culminates in a written document?

Silent Generation of Perceived Strengths and Weaknesses. During the second step of the NGT process,

participants were asked to independently list in writing their responses to the research questions. Participants were given as much time as needed and they were permitted to list as many responses to the questions as they desired.

Round Robin Listing of Strengths and Weaknesses. After the participants had completed their listings, each member of the group was asked to share a response using a round-robin approach. A recorder listed the responses on a flip chart and the round-robin process continued until all strengths and weaknesses on the participant's lists appeared on the flip charts.

Group Discussion of Perceived Strengths and Weaknesses. Serial discussions of each item appearing on the flip charts occurred. The central object of the discussions was to clarify each response and, if needed, to convey the logic or analysis behind the response.

Independent Voting on the Priority of Strengths and Weaknesses. At this point, participants were given 3" x 5" cards. They were then instructed to select the eight strengths and eight weaknesses that they believed to be most crucial and rank-order them. The greatest strength was assigned the numeral one, the second greatest strength was assigned the numeral two and so forth. The same procedure was followed to determine the most acute perceived weakness, the second most acute weakness, and so forth. The facilitator and the recorder for each group tallied the results.

Discussion of Preliminary Votes. After the voting had occurred and the rankings were tallied for each group, the five groups were merged into one group containing thirty participants. Likewise, the five lists were merged into one and duplicate responses were removed. Participants were again allowed to briefly discuss the responses for the purpose of clarification.

Final Ranking of Perceived Strengths and Weaknesses. Results from the two sections were combined and duplicate responses were removed. Participants from both sections were allowed to briefly discuss the two resulting lists, one made up of strengths and the other made up of weaknesses. Procedures followed in the final ranking of perceived strengths and perceived weaknesses duplicated the procedures followed in an earlier step, independent voting on the priority of strengths and weaknesses.

In addition to the NGT, a short questionnaire containing 13 items was administered to the 60 students who participated in the study. Nine items were statements to which the students responded by choosing an alternative from a five-point Likert-type scale, with alternatives ranging from strongly agree to strongly disagree. These statements were designed to solicit students' reactions to features of the collaborative approach including:

--generating a variety of potential solutions
--organizing and phrasing the message
--implementing a time-saving approach
--formulating a more effective message
--engaging in a cost-effective endeavor
--creating a high-quality document
--creating a more effective message.

The remaining four items were designed to uncover students' viewpoints regarding other characteristics of collaborative endeavors including:

--domination of discussion by one or more members of the group
--imposition of viewpoints by dominate members of the group
--the tendency of some members of the group to stray from the activity
--the ability of the group to reach a decision based on a consensus of opinions
--the desirability or undesirability of collaborative approaches as a strategy for preparing documents.

Analysis of Data

After the participants had ranked the challenges, the investigator recorded the numbers which identified each strength or weakness and the value rating assigned by each respondent to each of the strengths and weaknesses. The value ratings were then summed and divided by the number of times the strength and weakness was ranked (frequency). Thus, composite value ratings for each strength or weakness represented a mean score. Tables were then constructed so that a comparative analysis of the results could be conducted.

Responses to the items contained on the questionnaires were tabulated by frequency. Percentages for the composite group were then calculated.

Findings

After completing a collaborative writing assignment, student-participants identified and rank-ordered the perceived strengths that resulted from their endeavors.

As shown in Table 1, the perceived strengths were related to the generation of ideas or solutions, preparation of the written document, and the utilization of human resources.

Table 1
Perceived Strengths of Collaborative Writing

Rank Order	Perceived Strengths	Value Score
1	Generates a larger number of possible solutions	1.84
2	Exposes different points of view	3.44
3	Provides an opportunity to critique ideas/message	4.89
4	Leads to better word choices and more effective messages	5.04
5	Applies more human resources to decision-making and preparation of the document	5.11
6	Focuses the attention of additional people on editing and proofreading the message	5.13
7	Generates a faster flow of ideas	5.32
8	Creates a social work group with shared responsibilities	6.03

The perceived weaknesses, as rank-ordered by the participants, are depicted in Table 2.

Table 2
Perceived Weaknesses of Collaborative Writing

Rank Order	Perceived Weaknesses	Value Score
1	Generates too many ideas, some of which may conflict	2.87
2	Permits some collaborators to be free-loaders	4.23
3	Creates working relationships in which it is difficult to please everyone	4.26
4	Requires more time to arrive at a solution and, subsequently, prepare the message	4.43
5	Requires compromise (for the sake of agreement)	4.53
6	Places people possessing different writing styles together (requiring compromise)	5.03
7	Creates a work environment in which strong team members may dominate	5.26
8	Brings together collaborators with conflicting personalities	5.62

The perceived weaknesses, as identified by student-respondents, also related to the generation of ideas--some of which were considered to be conflicting. Other perceived weaknesses related to preparation of the written document with concerns about time required and necessary compromises. Finally, some perceived weaknesses were related to the utilization of human resources, especially dominate team members, freeloaders, conflicting personalities, and the satisfaction of all team members.

Findings revealed by responses to the questionnaire do not differ from the results generated by the NGT. The student respondents did, for example, express the greatest amount of agreement with the belief statement that suggested the collaborative approach was useful in formulating a variety of ideas. The belief statements, however, elicited opinions relating to a couple of concerns connected to collaborative writing: time and cost. As shown in Table 3, a majority of the student-respondents believed that collaborative writing was a time-saving approach for arriving at a solution and preparing the message. However, students were unsure as to the acceptability of the writing strategy in terms of cost-effectiveness. In fact, only 30 percent of the students agreed or strongly agreed that the collaborative strategy was cost-effective.

Table 3
Composite Viewpoints of Student-Participants Concerning Belief Statements Relating to Collaborative Writing

Belief Statements (N = 60)	Responses (Percentage) SA	A	U	D	SD	$\bar{X}$
Useful in formulating a variety of ideas as potential solutions	70	24	6	-	-	7.73
Useful in terms of critically examining the message for clarity, punctuation, grammar, sentence structure, and other quality measures	51	44	5	-	-	7.43
Helpful in organizing and planning the content of the written document	43	50	6	1	-	7.25
A useful strategy which culminated in a more effective message	24	60	15	-	1	6.77
A time-saving approach for arriving at a solution and preparing the message	19	30	30	20	1	5.77
An acceptable strategy in terms of cost effectiveness (Participants assumed that each collaborative group member was paid a competitive salary)	6	24	35	30	5	4.93

SA = Strongly Agree; A = Agree; U - Undecided; D = Disagree; SD = Strongly Disagree; and $\bar{X}$ = Composite Mean

Findings revealed in Table 4 also confirm the uncertainty of the cost-effectiveness of collaborative writing as viewed by student-participants. Fifty percent of the respondents agreed or strongly agreed that an individual written response would be more economical, while 33 percent were indecisive. An examination of the responses demonstrates that students view the collaborative approach as yielding a better product in terms of the recommended solution and correctness of writing.

Table 4
Composite Viewpoints of Student-Participants Concerning Individual Writing as Opposed to Group Writing

An individual response would have been	Responses (Percentage) SA	A	U	D	SD	$\bar{X}$
more cost-effective than the message produced using the collaborative approach	7	43	33	17	-	5.67
a more effective message in terms of the recommended solution	2	20	39	39	-	4.75
more effective in terms of clarity, word choices, and the application of writing mechanics	4	17	26	43	10	3.18

SA = Strongly Agree; A = Agree; U = Undecided; D = Disagree; SD = Strongly Disagree; and $\bar{X}$ = Composite Mean

Analysis of responses related to group interaction revealed that 35 percent of the student-participants believed one or more individuals dominated the discussions; 27 percent of the respondents thought one or more individuals imposed viewpoints on other collaborators; and 45 percent indicated that one or more individuals strayed from the assigned activity. Ninety-five percent of the student-participants believed the culminating product represented a consensus of opinions; five percent of the respondents disagreed.

Finally, student-participants expressed satisfaction with collaborative writing. Eighty-five percent of the respondents indicated that collaborative writing is a desirable strategy for preparing a business report. Ninety-three percent of the student-participants viewed the collaborative writing assignment as a valuable experience, and the remaining seven percent indicated that the collaborative writing assignment had the potential to be a valuable learning experience if procedural guidelines were established.

Conclusions

The following conclusions are supportable based on the results of the data:

1. The results of this study support the conclusion that group assignments in business writing classes are effective strategies for preparing students to function as members of a collaborative team.

2. Students' attitudes toward collaborative writing are positive. Student-participants indicated that the collaborative writing assignment was a valuable experience.

3. Student-participants recognize the more salient strengths and weaknesses of collaborative endeavors. They further recognize that a strength may also be a weakness (i.e. generates a larger number of solutions; generates too many ideas, some of which may conflict).

4. Student-participants believed that the collaborative strategy was helpful in organizing and planning the content of the business document.

5. Student-participants believed that the collaborative strategy was effective in terms of clarity, word choices, the application of writing mechanics, editing, proofreading, and the application of other quality measures that are necessary in producing an effective and technically-correct message. The fact that more human resources could be applied to decision-making and preparation of the document, and attention of additional people could be focused upon editing and proofreading was noted by the students.

6. While the student-participants tended to mildly support the premise that the collaborative strategy was a time-saving approach for arriving at a solution and preparing the message, they did not support the premise that the collaborative approach was an acceptable strategy in terms of cost-effectiveness.

7. Student-participants believed, with some exceptions, that business messages produced by a collaborative group were more effective than messages produced by individuals.

8. Student-participants recognized human frailties present in collaborative groups: freeloaders, domineering members, conflicting personalities, and individuals who stray from the assigned activity.

9. Some student-participants are uncomfortable when placed in a self-directed group. They would prefer procedural guidelines, such as: a group plans the document and divides the work, a group leader plans the work and divides it, or a group gathers information and discusses the topic, but a single writer plans and writes the document.

Implications for Business Education

Since collaborative writing is increasingly becoming a strategy in business, nonprofit, and government organizations, competencies needed by collaborative group members should be identified. It is important, however, to recognize that the situations which prompt collaboration may differ. In some situations, for example, the task may be too large and the time too short for one person to complete all the work. In other situations, it may be necessary for a group representing different perspectives to reach a consensus, or no one person has all the knowledge required. Sometimes the task may be so important to the organization that the best efforts of key people are needed, or no one person wants to accept sole responsibility for the success or failure of the

business document. An attempt should be made to determine if competencies required for success in collaborative writing endeavors are the same for all situations or if different situations require different competencies. Once such competencies are identified, learning activities may be structured which will enable students to acquire the competencies.

Business writing instructors should also examine the perceived weaknesses inherent in collaborative writing. Strategies for helping students overcome the perceived weaknesses should be formulated.

Recommendations for Further Research

Based upon the results of this study, the following recommendations are provided:

1. This study should be replicated at various educational levels where business writing is taught: secondary, post secondary, and college or university. Furthermore, the study should be replicated in other geographical areas.

2. This study should be replicated with practitioners to determine if their perceived strengths and weaknesses differ from those of college students.

3. Research should be conducted to identify competencies needed by collaborative writers in situations prompted by various workplace needs.

4. Research should be conducted to determine if some methods of teaching collaborative writing strategy are more effective than other methods.

5. Research should be conducted to identify and validate procedures for overcoming the perceived weaknesses inherent in collaborative writing.

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A Comparison of Faculties' and Business Executives' Perceptions Concerning the Importance of Business Communications Topic Areas to the Business Communication Course, the Daily Activities of a Business Executive and the Business Curriculum

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Abstract

This study investigates the perceptions of faculty and business executives concerning business communication topic areas. The perceptions of the faculty members are compared and contrasted with the perceptions of the business executives. Questionnaires were distributed to 92 Ohio University faculty members and 60 Ohio University Alumni. The findings of this study indicate that the areas presented in the business communication course are perceived to be important by the College of Business Faculty and Alumni Executives.

Introduction

One of the goals of a Business Communications course is to help the student understanding the importance of good communications in an organization. As communication instructors, we spend a great amount of time developing assignments to improve the students ability to communicate efficiently and effectively in a variety of situations. Are the topic areas covered in our business communication course relevant based on the perceptions of College of Business Faculty? relevant based on the perceptions of Business Executives? What similarities and differences exist between the perceptions of these two groups.

The concept investigated in this study concerns the perceptions of faculty and business executives concerning business communication topic areas. The objective is to compare and contrast the perceptions of Ohio University College of Business Faculty and Ohio University College of Business Alumni concerning the importance of business communication topic areas to the daily activities of business executives and to the business communication course. Often academicians assume that their course outlines and objectives are on line with the perceptions of practicing professionals. There is a need to determine if this is the case with regard to the business communication course. Therefore, the purpose of this study is to determine if the topics presented in the business communication course are relevant based on the perceptions of faculty members and business executives.

Methodology

The purpose of this study was to compare the responses of faculty members and business executives. The survey method was chosen for this study because (1) a relatively geographically-diverse population is used, (2) the utility of a questionnaire for collecting descriptive data is recognized, and (3) the need for perceptions of respondents from a large population is needed.

Selection of Business Communication Topic Areas

A review of syllabi used by the business communication faculty of Ohio University yielded a list of business communication topic areas. The 15 topic areas which were most often identified in the syllabi are the following: grammar and usage skills, business letter parts and appearance, good-news and neutral messages, bad-news messages, persuasive messages, memorandums, short reports and proposals, formal reports, graphic aids, business presentations, small group communication, listening, international business communications, resume and application letter, and legal and ethical considerations for communication.

Development of the Questionnaire

Two different questionnaires were designed: one instrument was developed for distribution to the 92 Ohio University faculty members and the other was created for distribution to the 60 alumni members of The Ohio University College of Business Society of Alumni and Friends.

Faculty Questionnaire. A questionnaire based on the business communication topic areas was developed and distributed. The questionnaire was entitled "The Importance of Business Communication Topic Areas as Perceived by the College of Business Faculty." The instrument contained 41 questions on seven pages. Clearly displayed instructions were provided at the bottom of each page indicating how the respondents should proceed. The questions were designed so that checkmarks and circles could be used for ease in responding.

The following 5-point Liked-type scale was used in the questionnaire to differentiate the perceptions of the respondents concerning the importance of the business communication topic areas to the daily job activities of a business executive and to the business communication course: 5--crucial topic area (topic area is critical to daily activities/business communication course); 4--very important (topic area is very important to daily activities/business communication course); 3--important (topic area is important to daily activities/business communication course); 2--not very important (topic area is not very important to daily activities/business communication course); and 1--not important (topic area is not important to daily activities/business communication course).

The questionnaire instructed respondents to rate business communication topic areas based on the topic areas importance to the daily activities of a business executive, based on its importance to the business communication course, and based on its overall importance to the business college curriculum. Statistical analysis will be conducted to compare the two groups.

Executive Questionnaire. A questionnaire similar to the one prepared for the faculty was developed for distribution to the 60 alumni members of the College of Business Society of Alumni and Friends, The difference between the two questionnaires was the addition of question 42. Question 42 asked the executives what was the highest educational degree earned.

Collection of the Data

During the week January 6, 1992, the questionnaires were distributed to the 92 faculty and 60 alumni. The return percentage for the faculty was 42% (39 of 92) and for the executives was 45% (27 of 60).

Statistical Data Analysis

Analysis of the data collected from the survey resulted in quantitative comparisons of the responses from the two groups for all variables as well as the identification of relationships among the variables. The Statistical Package for the Social Sciences (SPSSx) was used for this analysis.

Frequency distributions were used to tabulate totals for the responses. Multivariate analysis of covariance (MANOVA) was used to identify any relationships between the means of business communication topic areas of the respondents. MANOVA is a testing procedure used to determine if mean differences exist between variables; when using the MANOVA procedure, the significance of F statistic is used to determine if a significant difference exists. A .05 confidence level was used to determine significance.

Analysis of the Data

The results of this research is presented under two headings: demographic data and perceptions.

Demographic Data

The first research area examined was the demographic characteristics of the faculty members and executives.

Present age. Tables 1 identifies the age distribution of the faculty and the corporate executives responding to this survey. Nearly one-third of the administrators were between the ages of 51 and 60. On the other hand, only one-fifth of the executives were between 51 and 60 years of age. More executives than administrators indicated they were younger than 41.

Gender. The majority of the faculty and executives who responded to this survey were male. Almost all of the executives responding to the survey were male (92.6 percent), and 66.7 percent of the faculty were male.

Table 1
Present Age of College of Business Faculty and College of Business Executive Alumni

Age	COBF(%)	COBE (%)
30 years old or younger	1 (2.6)	2 (7.4)
31 - 40 years old	9 (23.1)	1 (3.7)
41 - 50 years old	9 (23.1)	22 (81.5)
51 - 60 years old	15 (38.5)	2 (7.4)
61 years or older	2 (5.1)	0 (0.0)
No response	3 (7.6)	0 (0.0)
TOTAL	39 (100.0)	27 (100.0)

Current job titles. Table 2 indicates the current job titles of the 39 faculty members who responded to this questionnaire. Over one fourth of the faculty members hold the positions of associate professor (28.2 percent) and professor (25.6 percent). Other titles identified were: "coordinator," "executive coordinator," and "executive assistant."

Table 2
Current Job Titles of College of Business Faculty

Title	Frequency	Percent
Assistant Professor	7	17.9
Associate Professor	11	28.2
Professor	10	25.6
Non-tenure Track	6	15.4
Administrative	1	2.6
Other	4	10.3
TOTAL	39	100.0

Table 3 discloses that "Chief Executive Officer" or "President" was the title for 25.9 percent of the executives. Approximately 22 percent identified their title as "Vice President." The largest percentage of responses was in the "other" category which included "Chief Fiscal Officer," "account executive," "sales representative," and "consulting executive."

Table 3
Current Job Titles of College of Business Executive Alumni

Title	Frequency	Percent
CEO/President	7	25.9
Vice President	6	22.2
Department Chair/Manager	1	3.7
Director	2	7.5
Other	11	40.7
TOTAL	27	100.0

Area of Expertise/Field of Study. Almost half (41.0 percent) of the faculty members identified management as their area of expertise. The largest percentage of executives stated that accountancy was the field of study in their highest earned degree. (Table 4). The "other" category for both groups included engineering, English, history, and combination or double majors.

Table 4
Area of Expertise/Field of Study of College of Business Faculty and College of Business Executive Alumni

Area	COBF (%)	COBE (%)
Accountancy	2 (5.1)	7 (25.9)
Marketing	6 (15.4)	2 (7.4)
Finance	4 (10.3)	2 (7.4)
Management	16 (41.0)	4 (14.8)
Management Info Systems	5 (12.8)	0 (0.0)
Communication	2 (5.1)	1 (3.7)
Law	2 (5.1)	1 (3.7)
Other	2 (5.1)	10 (37.0)
TOTAL	39 (100.0)	27 (100.0)

Completion of Business Communication Course. Twenty-four of the faculty members (61.5 percent) and 22 of the executives (81.5 percent) had previously completed a course in business communications.

Perceptions

The second major area investigated in this study was the perceptions of the faculty and business executives concerning the importance of business communication topic areas.

Table 5 displays the means of the 15 topic areas with regards to the importance of the topic area to the daily activities of a business executive. The significance of F value is presented to determine whether a significant difference exists between the two groups for the particular characteristic. A .05 confidence level was used to determine significance. For all 15 areas, no significant difference exists between the perceptions of the faculty and executives concerning the importance of business communication topic areas to the daily activities of a business executive.

Table 5
Comparison of Business Communication Topic Area Means Related to the Daily Activities of a Business Executive of the College of Business Faculty and College of Business Executives

TOPIC AREA	COBF	COBE	SIG/F	Sgnfcnt?*
grammar and usage skills	4.583	4.364	.208	NO
business letter parts and appearance	3.833	4.000	.543	NO
good-news/neutral messages	3.417	3.545	.568	NO
bad-news messages	3.708	3.682	.913	NO
persuasive messages	4.208	4.136	.723	NO
memorandums	3.708	3.682	.919	NO
short reports/proposals	4.292	4.045	.244	NO
formal reports	3.958	3.909	.869	NO
graphic aids	3.792	3.500	.201	NO
business presentations	4.417	4.545	.431	NO
small group communication	4.333	4.273	.771	NO
listening	4.375	4.773	.072	NO
international business communications	3.167	3.500	.236	NO
resume and application letter	3.333	3.455	.715	NO
legal and ethical considerationsfor communication.	3.750	4.091	.321	NO

*.05 confidence level was used to determine significance.

Table 6 shows the means of the 15 topic areas with regards to the importance of the topic area to the business communication course. There were significant differences between the means of two of the topic areas: short reports and proposals and listening. The faculty members perceived short reports and proposal to be more important to the business communication course than the executives, while the executives perceived listening to be more important than the faculty members.

Both groups were asked to rate the overall importance of the business communication course to the business curriculum. The mean for the faculty was 4.250, and the mean for the executives was 4.500. The significance of F statistic was .112, so no significant difference exists between the two groups.

Table 6

Comparison of Business Communication Topic Area Means Related to the Business Communication Course of the College of Business Faculty and College of Business Alumni

TOPIC AREA	COBF	COBE	SIG/F	SGNFCNT?*
grammar and usage skills	4.458	4.273	.437	NO
business letter parts and appearance	3.833	3.955	.691	NO
good-news/neutral messages	3.250	3.364	.629	NO
bad-news messages	3.333	3.591	.285	NO
persuasive messages	4.000	4.227	.321	NO
memorandums	3.708	3.636	.794	NO
short reports/proposals	4.333	3.727	.010	YES
formal reports	4.803	4.091	.976	NO
graphic aids	3.833	3.636	.411	NO
business presentations	4.542	4.636	.586	NO
small group communication	3.917	4.318	.154	NO
listening	3.958	4.682	.008	YES
international business communications	3.083	3.455	.143	NO
resume and application letter	4.042	3.818	.499	NO
legal and ethical considerations for communication.	3.792	4.136	.230	NO

*.05 confidence level was used to determine significance.

Conclusions and Recommendations

Although the findings of this study may be useful to all institutions offering a business communication course, generalization of the findings are limited to the Ohio University College of Business. Based on the data collected from these two groups, the following statements appear warranted:

1. The College of Business faculty and the College of Business Executive Alumni were more alike than different in terms of their perceptions of the importance of the business communication topic areas to the daily activities of a business executive. Although some differences exist between the two groups, only two were significant. Therefore, both groups have similar perceptions concerning the importance of the topic areas.

2. Both groups acknowledge the importance of all the topic areas to daily activities of a business executive. Based on this result, the topics discussed in business communications are directly related to the topic areas perceived to be important to the daily activities of a business executive.

3. Although both groups acknowledge the importance of all the topic areas to the business communication course, the College of Business faculty perceived short reports and proposals to be more important to the business communication course that the College of Business executives, and the executives perceived listening to be more important to the business communication course than the faculty. This may indicate a need to re-evaluate the time allotments for the two topic areas during the course. In light of these responses, a more detailed analysis of the presentation of short report and proposal writing and listening skills is necessary.

4. Both groups acknowledge the importance of the business communication course to the business curriculum.

5. As evidenced by the fact that no mean in any topic areas for both groups was below 3.000, all the topic areas were considered "important" to the daily activities of a business executive and to the business communication course. Therefore, the areas included in the business communication course offered at Ohio University are relevant based on the perceptions of the College of Business Faculty and Alumni Executives.

6. Similar studies should be conducted at other institutions with larger samples of faculty and business executives from various institutions to ensure that the information presented in business communication courses is relevant based on the perceptions of the faculty and business executives.

Desktop Publishing Competencies Needed in the Business World

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Abstract

The modified Delphi technique was used to identify the specific competencies needed to be successful in business positions that use desktop publishing. Ninety-four competencies and their levels of importance were identified by a panel of 30 experts. The 94 competencies identified had high consensus. Ninety competencies were determined to be of high priority; four were low priority. Desktop publishing experts are in general agreement concerning the competencies needed by individuals using desktop publishing in business.

Introduction

With the rapid advances in computer technology occurring during the last decade, more people are using the computer as a tool to communicate. The business world is involved in some form of communication 80 percent of the time. Written or "print communications are powerful because they are tangible. The spoken word begins to lose effectiveness the moment it's spoken. But print communications have a life of their own . . . and they take place at all levels" (Parker, 1987, p. 2) of business.

Rosen (1989) reported that desktop publishing has captured the attention of computer users. "The potential for improvement of document quality and appearance . . . has been sufficient to make a variety of users adopt widely this technology" (Sinha, 1989, p. 1). This new technology allows the user to have control over the creation of printed documents. Since U.S. corporations spend about 10 percent of their gross revenues on some form of publishing, Stanton (1991) determined that desktop publishing can save many of those dollars.

Business and industry have invested in desktop publishing for many reasons. Diamond (1987) included the lower cost of production, instant results, in-house control, increased productivity, professional appearance, and immediate access as just some of the benefits users of desktop publishing receive. Welsh and Kleper (1990) concluded that "almost every area of business, industry, government, and education has benefited from desktop publishing" (p. 3). Romei (1989) found consensus concerning the perception that "the area of training is the most neglected facet" (p. 102) of implementing desktop publishing into a company.

Many businesses today are hiring individuals to work specifically as desktop publishers or to work in positions where they are required to do desktop publishing. Fenner (1989) indicated that businesses are now looking "to educators for help in preparing these individuals" (p. 19). As Sinha (1989) stated, "Schools must incorporate desktop publishing into their programs to prepare students successfully for the business world" (p. 2). Kruse concluded "The business community wants job-ready graduates from its secondary educational institutions" (p. xi). Krizan (1989) reported, however, that few learning institutions are training students with the necessary skills needed to perform desktop publishing tasks.

Preparing individuals to work with this technology is a challenge because education has yet to define the role of desktop publishing in the curriculum (Wentling, 1989). Desktop publishing has "blurred the lines between the traditional roles in publication design and production" (Bell, 1992, p. 19), but it has not eliminated the need to perform each task. Endrijonas (1989) concluded that individuals must be taught effective visual communications as well as how to use desktop publishing to produce documents effectively (p. 88).

Without a clearly defined role for desktop publishing in the work place environment, it is difficult to identify the specific training needed by business employees. Zich (1988) reported that a survey of corporate personnel managers and desktop publishing experts revealed that they could not identify the specific competencies needed by individuals being hired for positions that included desktop publishing duties. To prepare individuals efficiently to function in today's technology-oriented business environment, specific competencies must be identified.

Purpose of the Study

The purpose of this study was to identify the specific competencies needed by individuals to be successful in business positions that use desktop publishing. This study endeavored to assemble "the right content experts--the people with know-how you're trying to pass along--and getting the information out of their heads" (Gayeski, 1989, p. 35) onto paper in the form of

competencies and with an indication of their relative importance. With desktop publishing competencies identified, appropriate curricula can be developed.

This study attempted to answer the following research questions:

1. What competencies, as identified by a group of desktop publishing experts, are needed by individuals to perform desktop publishing tasks in business?

2. What level of importance does the panel of experts attribute to the identified competencies?

Methodology

The Delphi technique was selected for this study because it enabled the researchers to obtain a group of experts' opinions about desktop publishing competencies needed without consideration of cost, schedule, and time that would be required to hold a face-to-face meeting with the experts. A modified version of the Delphi technique was utilized--panel members were provided with a beginning list of competencies to evaluate and encouraged to suggest additional competencies. The modified Delphi instrument contained desktop publishing competencies that were developed from the task analysis list in the Mid-America Curriculum Consortium curriculum guide, *Basics of Desktop Publishing* (Beeby, 1991).

Selection of members to serve on the panel of experts was based on a review of the related literature. After an extensive study of publications that described uses of desktop publishing in the workplace and/or classroom, 30 individuals were selected to serve on the panel. The 30 panelists were from different geographic regions of the U.S. They represented four categories of experts and were distributed as follows: (a) secondary and vocational instructors--five, (b) university and postsecondary instructors--ten, (c) business professionals--ten, and (d) desktop publishing authors--five.

Thirty-three competency statements for the round one instrument were developed from the task analysis list contained in the *Basics of Desktop Publishing* (Beeby, 1991) curriculum guide and were classified into six subgroups. The six subgroups of competency statements were: (a) understanding the computer, (b) determining desktop publishing system requirements, (c) using desktop publishing software features, (d) understanding type specifications, (e) designing and creating desktop publishing documents, and (f) determining document specifications and layout. The panel members responded to the 33 beginning competencies by indicating their importance on a six-point Likert-type scale ranging from Unimportant (1) to Important (6) and identified other competencies needed by business employees. The panel generated 61 additional competencies. The added competencies were classified into the six existing subgroups based on the panelists' recommendations. The resulting list of 94 competencies formed the basis for the remaining instruments.

The round two instrument was the beginning of group dialogue. Feedback was given to each panelist regarding the group mean response for each of the 33 original competencies. Each individual instrument was also marked with the panelist's round one responses to aid in comparing the individual's responses with the group's responses. The 61 additional competencies suggested by the panel of experts had been added to the instrument. Each panel member was asked to re-evaluate the importance of the competencies rated previously by repeating or changing his or her response and to indicate the importance of the new competencies.

The instrument for round three provided round two feedback to the panel members. For each of the 94 competencies, the group's mean responses and the respective panel member's responses were provided. Each panelist was requested to re-evaluate his or her response and to confirm or change the rating of importance of each competency.

Upon receipt of all round three instruments, the means and standard deviations for each of the 94 competencies were computed. The competencies in each subgroup were arranged in descending order by mean (from high priority to low priority) and then arranged in ascending order by standard deviation (from high consensus to low consensus). When the consensus levels for the 94 competencies were examined, it was determined that the standard deviation was 1.10 or less on a six-point Likert-type scale for all 94 competencies. Because the round-three means and standard deviations showed high consensus by the panel, the iteration process was terminated and the round three data were analyzed.

Assumptions

The Delphi technique is based on two underlying assumptions: (a) "that if participants agree and by agreeing move closer to a central position or consensus, the resulting data will be more believable and (b) that anonymous responses . . . are more likely to lead to reasonable and objective input than are the activities of interpersonal conferencing" (Rasp, 1974, p. 322).

For this modified Delphi study the following assumptions were made by the researchers to guide the analysis of round three data:

1. For a competency to be considered high priority by the panel, the mean score must be 3.50 or higher on a six-point Likert-type scale.

2. A competency with a standard deviation of less than 1.50 on a six-point Likert-type scale was considered to have obtained a high consensus rating by the panel.

3. The criteria of priority and consensus were used in the data analysis. Therefore, the following combinations were examined: high priority and high consensus competencies, low priority and high consensus competencies, high priority and low consensus competencies, and low priority and low consensus competencies.

High Priority and High Consensus Competencies

Ninety competencies were identified by the panel as having high priority and high consensus. Table 1 identifies the six competency subgroups and arranges the competencies in each subgroup in descending order of priority based upon the mean. The standard deviation for each competency is also provided.

Of the 90 competencies with a high priority and high consensus ranking, 45 had a mean of 5.00 or greater on a six-point Likert-type scale and were represented in five of the six subgroups. The one subgroup that did not have a competency ranked high priority and high consensus with a 5.00 or greater mean was determining desktop publishing system requirements. The five remaining subgroups that had competencies with a mean of 5.0 or greater are: (a) understanding the computer--9 competencies, (b) using desktop publishing software features--15 competencies, (c) understanding type specifications--8 competencies, (d) designing and creating desktop publishing documents--9 competencies, and (e) determining document specifications and layout--4 competencies.

Forty-five of the 90 high priority and high consensus competencies had a mean of 3.50 to 4.99 on a six-point Likert-type scale. All six subgroups contained competencies in this range of means: (a) understanding the computer--11 competencies, (b) determining desktop publishing system requirements--18 competencies, (c) using desktop publishing software features--3 competencies, (d) understanding type specifications--3 competencies, (e) designing and creating desktop publishing documents--6 competencies, and (f) determining document specifications and layout--4 competencies.

Table 1
Desktop Publishing Competencies with High Priority and High Consensus

Subgroup	Competency	Mean	S.D.
Understanding the Computer			
	Create word processing text documents and store on diskettes.	5.71	0.59
	Boot computer systems.	5.61	0.67
	Move among files in software packages.	5.61	0.49
	Make back-up copies of diskettes.	5.54	0.73
	Use a mouse.	5.54	0.63
	Access application software programs.	5.54	0.50
	Format diskettes.	5.43	0.94
	Perform file maintenance functions (copy, rename, delete, etc.).	5.07	1.03
	Use word processing software manuals and follow basic instructions.	5.04	0.50
	Use computer operations manuals to troubleshoot operating procedures.	4.68	0.66
	Differentiate between high and low resolution outputs.	4.50	0.68
	Convert text files from one format to another format.	4.50	0.50
	Install software packages.	4.39	1.01
	Connect computer hardware components.	4.29	0.84
	Maintain equipment.	4.25	0.74
	Use RAM, hard disk, and file management procedures.	4.25	0.57
	Convert graphic files from one format to another format.	4.21	0.49
	Identify implications of changing desktop publishing platforms (IBM, Macintosh, other).	3.93	0.88
	Explain function of software import and export filters.	3.71	0.99
	Prepare EPS (Encapsulated PostScript) files for printing.	3.68	1.04
Determining Desktop Publishing System Requirements			
	Identify system requirements for software.	4.61	0.90
	Use draw programs.	4.61	0.94
	Use paint programs.	4.54	0.98
	Evaluate printing systems, including lasers and typesetting equipment.	4.32	0.66
	Evaluate desktop publishing software packages.	4.25	0.63
	Evaluate peripheral software (word processors processors, graphics, paint, draw, etc.).	4.21	0.77
	Evaluate desktop publishing system hardware (different platforms--IBM, Macintosh, other).	4.21	0.86
	Scan and adjust contrast of photographs.	4.18	1.04
	Scan and adjust contrast of line art.	4.11	0.94
	Scan and edit text.	4.07	1.03
	Develop desktop publishing system specification lists.	4.00	0.80
	Select disks, paper, and other consumable supplies.	4.00	0.85
	Create screens for different types of paper.	3.75	0.95
	Identify on-going costs of operating desktop publishing systems (for budget control).	3.71	0.99
	Identify basic setup costs of desktop publishing systems.	3.68	1.00
	Install filters to import specific files.	3.68	1.10
	Describe spot color separations.	3.61	0.86
	Describe process color separations.	3.54	0.78
Using Desktop Publishing Software Features			
	Copy/paste and cut/paste text blocks.	5.86	0.35
	Edit and move text within page-layout documents.	5.79	0.49
	Use page-layout software programs.	5.75	0.43
	Import files (word processing, graphic, paint, draw, etc.) into page-layout documents.	5.71	0.52

table continued

Subgroup	Competency	Mean	S.D.
	Use type-specification features.	5.64	0.55
	Use document or page-layout options (column guides, rulers, master pages, etc.).	5.64	0.55
	Use mouse to manipulate screen objects (create insertion points, drag elements, etc.).	5.64	0.72
	Use page-specification features.	5.61	0.56
	Use paragraph-specification features.	5.61	0.49
	Create, edit, and move headlines.	5.61	0.49
	Use print-specification features.	5.57	0.68
	Use page-layout software program basic tools (graphics, text, cropping).	5.36	0.55
	Use publication-window features.	5.18	0.60
	Use spell- and grammar-check features.	5.18	0.54
	Create special effects (lines, shades, etc.).	5.07	0.80
	Use page-layout software program help screens.	4.68	0.76
	Create and use macros.	3.71	0.99
	Use DDE (Dynamic Data Exchange) and OLE (Object Linking & Embedding) features.	3.71	0.88
Understanding Type Specifications			
	Use text enhancements (bold, underline, italic, etc.).	5.71	0.45
	Use type styles (serif and sans serif).	5.39	0.56
	Adjust leading, kerning, and letter spacing to change appearance of documents.	5.32	0.54
	Apply graphic design principles when using type styles.	5.29	0.52
	Adjust fonts to document size.	5.21	0.41
	Differentiate between fonts and type styles.	5.21	0.62
	Apply readability standards to documents.	5.04	0.63
	Measure type.	5.00	0.71
	Differentiate between screen fonts and printer fonts.	4.86	0.74
	Use extended or special characters.	4.43	0.62
	Use superscript and subscript text.	4.43	0.73
Designing and Creating Desktop Publishing Documents			
	Position graphics in documents.	5.82	0.38
	Rescale and crop/edit graphics.	5.79	0.41
	Use principles of good design in documents.	5.64	0.48
	Prepare single-page documents.	5.61	0.72
	Create lines, boxes, circles, and shades with page-layout tools.	5.61	0.62
	Prepare multi-page documents.	5.57	0.56
	Develop pages around graphic elements.	5.39	0.49
	Complement graphics with appropriate elements (formal picture with formal text).	5.21	0.41
	Stack (layer) graphics and text.	5.11	0.56
	Prepare letterheads.	4.75	0.57
	Prepare business forms.	4.68	0.66
	Generate indexes and/or tables of contents.	4.64	0.77
	Prepare computer-generated page grids.	4.57	0.68
	Combine separate documents into multi-chapter publications.	4.32	0.97
	Design portfolios of associated publications for businesses and/or organizations.	4.29	0.84
Determining Document Specifications and Layout			
	Proofread documents.	5.43	0.62
	Evaluate design and layout of documents.	5.32	0.89
	Develop specifications for single-page flyers.	5.18	0.47
	Develop specifications for multi-page documents.	5.11	0.49
	Adjust copy to fit characteristics of documents.	4.96	1.02
	Use style sheets.	4.82	0.66
	Create style sheets (format specifications) for documents.	4.75	0.57
	Use templates.	4.71	1.03

Note: The higher the mean, the greater the priority; the smaller the standard deviation, the greater the consensus.

Low Priority and High Consensus Competencies

Four competencies, listed in Table 2, are in the low priority and high consensus combination ranking. Two subgroups have competencies with this combination: (a) understanding the computer--three competencies and (b) determining desktop publishing system requirements--one competency. The means for these four competencies ranked as low priority and high consensus ranged from 2.79 to 3.32.

Table 2
Desktop Publishing Competencies with Low Priority and High Consensus

Subgroup	Competency	Mean	S.D.
Understanding the Computer			
	Use compression software programs.	3.21	0.82
	Setup new computer systems from scratch.	3.04	0.94
	Print documents to film.	2.79	0.94
Determining Desktop Publishing System Requirements			
	Use optical character recognition software.	3.32	0.93

Note: The higher the mean, the greater the priority; the smaller the standard deviation, the greater the consensus.

None of the competencies identified by the panel members were ranked in the high priority and low consensus or the low priority and low consensus combinations. Thus, no competency identified by the panel had a standard deviation greater that 1.50 on a six-point Likert-type scale.

table continued

Conclusions

Desktop publishing experts are in general agreement concerning the list of competencies that are needed to be successful in business. Based upon the analysis of data collected in this study, the following conclusions are made:

1. The panel of experts reached high consensus on the 94 desktop publishing competencies.
2. The panel of experts rated 90 of the 94 high consensus desktop publishing competencies as high priority.
3. The panel of experts rated 4 of the 94 high consensus desktop publishing competencies as low priority.

Recommendations

The following recommendations are based on the data collected and the conclusions made in this study:

1. Individuals preparing students to enter the business community need to be aware of the rapid technological advances and changes occurring in desktop publishing. Krizan (1989) stated that educators face many new challenges, and desktop publishing is the next major hurdle facing the business curriculum.
2. Educators need to teach desktop publishing to students planning to enter the business world. This recommendation is supported by earlier studies (Romei, 1989; Henry and Perreault, 1988; Gayeski, 1989). Anderson (1992) also reported that the use of desktop publishing by business executives is expected to increase by 35.7 percent by 1995.
3. Educators need to teach graphic design, document/layout specifications, and typology to students planing to enter the business world. Studies by Endrijonas (1989) and Berghaus (1988) also found that effective documents visually communicate and are needed in the business world.

Implications

Business educators need to incorporate desktop publishing technology at different instructional levels because it has become a part of the business work place environment. Different levels of management are using desktop publishing to complete tasks and to communicate more effectively. If students are to function effectively in business, desktop publishing competencies must be mastered.

Since vocational educators are the primary trainers of individuals entering the work place, teacher education programs need to update their curricula continually to stay abreast of the changing technology. Business educators need preservice and inservice experiences that prepare them to teach desktop publishing and remain up to date.

Recommendations for Further Study

Upon completion of this study, the researchers recommend the following areas for further investigation:

1. a study to determine the most effective and efficient ways to teach the high priority and high consensus desktop publishing competencies;
2. a study of the methodologies being used to teach desktop publishing at various levels of instruction;
3. a study of the role of desktop publishing in secondary and postsecondary office technology and related programs;
4. a study of the role of desktop publishing in business education, graphic arts, journalism, and English curricula;
5. a study of the desktop publishing preservice and inservice needs of teachers; and
6. a study by geographic regions of desktop publishing competencies needed in the business world.

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Determination of Attributes of an Effective Business Education Teacher as Perceived by Georgia High School Business Education Teachers and High School Business Education Students

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Abstract

This study was designed to determine the perspectives of Georgia high school business education teachers and their students regarding effective teaching. Data was gathered from 78 business teachers and 1,390 students enrolled in business classes located in rural, suburban, and urban high schools. The findings of the study indicate that students prefer teachers who are genuinely interested in them as students, who incorporate a variety of teaching strategies, who relate class work to the work world, and those who challenge them intellectually. There was a strong correlation with the teachers from the three school settings with regard to 23 variables relating to effective classroom teaching.

Introduction

Charges of ineptitude and inability to get the job done are consistently being directed at educators and educational delivery systems at all levels. Schools/colleges of education are repeatedly accused of offering scores of watered-down courses as well as a plethora or methods courses to address every possible topic.

These issues come at a particularly interesting time in that an increased demand for teachers is projected while at the same time fewer and fewer young people are choosing teaching as a career. And when those young people do opt for teaching, they are blatantly ridiculed for doing so or suffer financially because their families do not deem teaching to be a "respectable" or "worthy" career pursuit (Goodlad, 1990).

It would appear appropriate, then, to begin to look at the place where the majority of our graduates teach--the secondary level--to determine what the teachers and students at that level perceive to be attributes of an effective teacher. More simply stated, "What makes a business teacher good?" And, are there perceived or real differences between a novice and an experienced teacher?

A longitudinal study by Vonk and Schras (1987) studied beginning teachers in their first four years of service. They found that the first year was a major growth year, moving from being very involved in many school matters to developing a rational approach in dealing with classroom preparation and classroom management. They also "tended to adapt to the existing learning materials, textbooks, etc. . . their lessons have become rather traditional" (107). The study also determined that "Most teachers do not consider the teaching profession a life long job" (107). This especially presents interesting and disturbing consequences for teacher education programs and schools themselves.

The Vonk and Schras study is especially important to this study as their questionnaire establishes several critical areas which would be addressed here. Those areas are "questions regarding the school environment . . . . questions about the teacher's functioning at the school level . . . . questions with respect to the teacher's functioning on a classroom level . . . . questions with respect to the teacher's functioning in his contacts with (individual) students . . . ." (100-101).

A study by Daniel and Okeafor (1987) examined "the relationship between teachers' logic of confidence beliefs, their level of teaching experience, and the object of confidence--self, the typical beginning teacher, and the typical experienced teacher" (23). There were no statistically significant differences in group means except with regard to perceptions of beginning teachers. The more experienced teacher placed "a lower level of confidence in the performance of the beginning teacher" (23).

This issue of confidence in the beginning teacher is critically important to teacher education programs. What might be missing from the preservice experience to cause people to have a lower level of confidence? Is the present typical preservice undergraduate program adequate? Is the move to a five-year program suggested by the Holmes Group a reasonable and much-needed move?

Riggs and Enochs (1990) suggest that an inquiry into teacher beliefs is essential to better understanding teacher behavior. These authors report on Bandura's theory of teacher self-efficacy regarding teacher effectiveness that "teachers who believe student learning can be influenced by effective teaching (outcome expectancy beliefs) and who also have confidence in their own teaching abilities (self-efficacy beliefs) should persist longer, provide a greater academic focus in the classroom, and exhibit different types of feedback than teachers who have lower expec-

tations concerning their ability to influence student learning" (626). Riggs and Enochs also found that student achievement is intimately tied to teacher efficacy belief. In other words, teachers who do their best and also expect the best from their students often get the best efforts from their students.

LeFevre (1967) reported that when college students were asked to describe the best teacher they ever had, that individual often had both "an academic and a personal influence on the student" (435). This supports the premise that effective teaching--at any level--consists of much more than imparting knowledge. It must include the notion that students, at a minimum, are active participants in the learning process.

Consistently, the literature regarding teacher effectiveness establishes a strong relationship between the intellectual and personality aspects of "good" teachers.

The research of Bybee and Chaloupka (1971) was especially helpful in establishing the questions for inclusion in this study. Secondary school students responded via a Q-sort to questions regarding the following teacher characteristics: "knowledge and organization of subject matter, adequacy of relations with students in class, adequacy of plans and procedures in class, enthusiasm in working with students, and techniques or methods of teaching" (31). Their investigation found that teachers who cultivate a welcoming, non-threatening classroom environment and who clearly enjoy teaching are those preferred by students.

This study is a first step in determining attributes of business teachers at the secondary level. It is a reasonable place to begin to gather data to affect curriculum revision in business teacher education programs for the 21st century, especially in light of often extreme demographic changes in the classroom.

Purpose

The purpose of this study was to determine attributes of an effective business education teacher as perceived by Georgia high school business teachers and high school business education students. Specifically, answers to the following research questions were sought:

1. What knowledge level and personal characteristics do high school business teachers perceive that they need to be considered effective?

2. Do these perceptions differ between novice business education teachers (<5 years) and experienced business education teachers (6 or more years)?

3. Do high school business education students have a different perception from teachers of what constitutes an effective business education teacher?

4. Do demographic variables of gender, race, and age influence these perceptions?

Procedures

Based on a thorough literature review, a questionnaire was developed. The Business Education faculty at The University of Georgia critiqued the questionnaire. The survey was piloted tested in October at two urban, two suburban, and two rural schools in Georgia. The pilot test data were presented at two professional meetings: Southern Business Education Association, October 1991 and the 29th Annual Southeastern Business Education conference, February 1992. The participants were asked to comment on the questionnaire. Minor revisions were suggested and later incorporated.

The population was comprised of all the public high schools in the state of Georgia with business education programs. The 1990-1991 Directory of Business Education Teachers in Georgia was provided by the State Department of Education. Every school in the population was categorized with regard to the population of the city/town in which it was located. The following breakdown guided the classification:

Urban:	population of 50,000 or more
Suburban:	population of 12,500 - 49,999
Rural:	population of 12,499 or less

A 60 % stratified random sample was selected. As indicated in Table 1, the majority of schools in Georgia are located in rural settings.

Table 1
Georgia Business Education Programs Classified by City/Town Population and Response Rate

	Number	60% Sample	Teachers Responding N	Teachers Responding %	Students Responding N
Urban	48	28	9	32	168
Suburban	80	48	17	35	299
Rural	198	119	52	44	923
Total	326	195	78	40	1,390

The largest response was from the rural schools which was where the majority of programs are located, thus working to ensure representativeness.

Permission was obtained from the principals of those randomly selected schools for their business education teachers and students to participate in the study. A preprinted, addressed, stamped postal card was provided to each principal for their convenience in indicating the name of both a novice and an experienced business teacher. In some instances, principals

indicated that parental consent forms would be required in order for their students to participate in the study. For those schools indicating that no parental consent forms were needed, each teacher was sent a cover letter, questionnaire, and self-addressed, stamped envelope. Each teacher also received the student questionnaires. One student was selected to gather all completed questionnaires, put them in a self-addressed, stamped envelope and return to the main office to be put in the mail. This procedure was developed in order to eliminate any teacher influence in student response.

For those schools indicating that parental consent forms were needed, each teacher was sent a cover letter, questionnaire, and self-addressed, stamped envelope. Each teacher also received the parental consent forms and student questionnaires. Each student was given two parental consent forms. Parents giving permission for their child to participate signed both forms, keeping one for their own records and returning one to school which was ultimately returned to The University. After allowing two to three days for the consent forms to be returned, the teacher allowed each student who returned a consent form to complete the questionnaire. These students then followed the same procedure for returning their questionnaires.

Teacher Demographics

The novice teachers accounted for 39.7% of the respondents, while experienced teachers accounted for 60.5%. Overwhelmingly, Georgia high school business education teachers are white females as shown in Table 2.

Table 2
Teacher Respondents by Gender and Ethnicity

	Number	Percent
Gender		
Female	73	93.6
Male	5	6.4
Ethnicity		
African American	9	11.5
Caucasian	64	82.1
Native American	5	6.4

In addition, over 46% of those teachers participating in the study are 40 years of age and older. Only 19.2% are 30 or under.

Findings

The findings from this study are subdivided into two sections: Teacher Responses and Student Responses.

Teacher responses

Teachers were asked to indicate which one of three responses they felt best described an effective teacher. The vast majority, 94.9%, chose this response: "One who has a genuine love of learning and helping others learn." This finding was consistent across rural, suburban, and urban schools as shown in Table 3.

Table 3
Descriptors of Effective Teachers

	Total		Rural		Suburban		Urban	
Choice	N	%	N	%	N	%	N	%
A	74	94.9	49	94.2	17	100	88	8.9
B	1	1.3	1	1.9	0	0	0	0
C	1	1.3	1	1.9	0	0	0	0
D	2	2.6	1	1.9	0	0	1	11.1

Key:
A = One who has a genuine love of learning and helping others learn.
B = One who plans well and stays strictly with that plan.
C = One who feels it is his/her job only to impart that knowledge which deals directly with the course content.
D = Other.

The responses of novice and experienced teachers were consistent with those of the total group. When asked to choose the response that best described an effective teacher, 93.5% of novice teachers and 95.7% of experienced teacher also chose: "One who has a genuine love of learning and helping others learn."

The idea of an effective teacher as one who helps others learn was supported by the teachers in this study when they were asked why those chose teaching. The majority, 85.9%, chose this response: "It is my career goal to help others learn to help themselves, establish goals, and reach those goals." This finding illustrates the fact that the participants in this survey actually **practice** the premise they support as a foundation of effective teaching. In fact, this finding is strongly supported by both novice, 87.1%, and experienced teachers, 85.1%.

One may then want to assume that teaching would have been the first career choice for these teachers. Based on the data gathered for this study, that would be an accurate assumption for all groups except those people teaching in a urban school. Overall, 60.3% of the respondents indicated that teaching was their first career choice. Table 4 shows the responses from the total group as well as the responses by school location.

Table 4
Teaching as First Career Choice

	Total		Novice		Experienced		Rural		Suburban		Urban	
	N	%	N	%	N	%	N	%	N	%	N	%
Yes	47	60.3	17	54.8	30	63.8	31	59.6	12	70.6	4	44.4
No	31	39.7	14	45.2	17	36.2	21	40.4	5	29.4	5	55.6

Even though the actual difference is slight, this may be indicative of a situation where an individual "tries out" another career and ultimately ends up in teaching.

The responses of the teachers by school location to 23 variables correlated highly, 79%, using Cronbach's Coefficient Alpha. Using principal components as the original factor analysis method, six factors accounted for 88.1% of the variance. The eigenvalues for these six factors was 1.8 or greater. A scree plot of eigenvalues supported the principal components factorial method. The key information from the factor analysis is shown in Table 5 which includes the title, factor loadings, and percentage of variance accounted for. The titles of the six factors derived are: creativity and change; professional development; total student concern; flexibility; communicating with students; and critical thinking.

Table 5
Factor Analysis Results for Effective Teacher Variables - Teachers

Factor	Variable	Factor Loading	Percent Variance
1	Creativity and change		24.5
	Effective of classroom environment and bulletin boards on effectiveness	.881	
	Work with colleagues to meet individual students' needs	.858	
	Important to obtain summer employment in business and industry	.760	
	Important to subscribe to appropriate professional journals	.640	
2	Professional development		17.7
	Do they enjoy teaching as a career	.944	
	Important to attend workshops/courses at own expense	.817	
	Important to get feedback from studentsregarding how and what you teach	.784	
	Important that administrator(s) provide climate that stimulates you to learn new things to share with students	.643	
3	Total student concern		13.8
	Willing to collaborate with teachers outside business education to provide students with different learning opportunities	.936	
	Important that your students graduatefrom high school	.879	
	Actually do collaborate with teachers outside business education to provide students with different learning opportunities	.806	
	Important to develop a caring environment for students	.548	
	Important to be accessible to students outside classroom	.461	
4	Flexibility		12.3
	You participate in extra/co-curricular student activities	.876	
	Important to experiment with different teaching strategies and ideas	.779	
	Important for your students to become employed in a related area	.613	
	Important to relate subject matter to real world your students will enter	.572	
	Important to accommodate differing student abilities	-.634	
5	Communicating with students		11.8
	Important to clearly inform students of daily learning objectives	.826	
	Extra/co-curricular participation enhances teaching effectiveness	.817	
	How satisfied are you with your present teaching position	.766	
	Important to develop personal relationships with students	.764	
6	Critical thinking		8.0
	Important to develop critical thinking skills in your students	.913	

NB: Only factor loadings greater than plus or minus .450 are shown.

Similar data were gathered from these teachers' students.

Student responses

Many of the questions from the teacher survey were reworded for the student survey. The students were asked whether or not their teachers experimented with different ways of teaching. The responses appeared to be closely divided between yes, 47.5%; no, 49.5%; and no response, 3%. If the answer was "yes," the students were asked to state in what ways their teachers experimented. Several common threads surfaced from students in all three population groups. The students liked the fact that their teachers let **them** teach sometimes; that they could work individually sometimes; that more than one method was taught to accomplish whatever they were learning; that "if I don't get it one way she'll give me different ways to do it till I get it;" that they learned via hands-on activities, not just through lecture; and that the teachers made learning fun. The message is clear that students like very much being participants and not just observers in the learning process.

Students were asked whether or not they participated in extracurricular clubs and activities. Of the total respondents, 72.2% indicated that they did participate. Nearly 60% of those professing participation also indicated that they helped them learn more.

One issue often addressed in methods classes is that of relating the daily lesson to the world in which the student lives and one day will work. When asked, "Does your teacher relate what you are learning to what you will need when you graduate or leave school?", 1,273 or 91.6% of the students answered yes.

The students were also asked whether or not their teachers developed a warm, caring relationship with their students, a topic of concern that surfaced in the teachers' responses. Of the 1,152 responding, 82.9% answered yes.

Perhaps, however, the most important data were obtained from the last two questions the students were asked. The students were given a list of three choices and were asked to circle the **one** that their teacher did best. They were also given the opportunity to provide a response not on the list. Table 6 presents the options and student responses.

A common theme throughout the students' written statements was that the teacher was willing to be flexible in order to help the students learn, was willing to go beyond the day's assigned topic, and had compassion for his/her students. Some of the students' comments are more telling than a paraphrase:

-If someone doesn't understand, she really takes the time to explain and doesn't get frustrated with the student.

--She doesn't pamper anyone; she simply does her job and expects nothing but the best from any of her students.

Table 6
What Teachers Do Best

Choice	N	%
A	381	27.4
B	394	28.3
C	475	34.2
D	99	7.1
Unusable responses	41	3.0

Key:

A = Plans lessons about things we need to know to get a job or get into school later.
B = Plans lessons that are interesting, sometimes hard, and sometimes fun.
C = Teach us not only what the book says, but also other stuff he or she just knows about our subject.
D = Nothing on this list, but this is what I think he or she does best.

--She talks to us about why we need an education and why we should stay in school and she also talks to us about being responsible.

--Enjoys teaching and helping students learn.

--Plans lessons that are challenging and she's teaching us basically how to be somebody.

--Treats us as humans, not just a bunch of kids under her control.

These students were also given the opportunity to show where their teachers need to improve most. Most, 56.2%, were pleased; however, the data in Table 7 shows that some felt there was room for improvement.

Again, when the students provided their own responses, commonalities appeared. Students clearly want their teachers to **teach** and not just expect the students to follow directions. Some of the students also felt they could be pushed harder. Others wanted more time to work on assignments in class. The following are some of the students' actual comments.

--Spend more time verbally teaching and going through the objectives in advance.

--She needs to teach, explain, and review lessons, not just expect us to follow instructions in a book.

--She needs to challenge us more and give us more strict assignments.

The student responses by school location to nine variables correlated highly, 76.7%, using Cronbach's Coefficient Alpha.

Table 7
Where Teachers Need to Improve Most

Choice	N	%
A	144	10.4
B	88	6.3
C	52	3.7
D	144	10.4
E	135	9.7
F	781	56.2
Unusable responses	46	3.3

Key:
A -- We need to feel we are important to him or her.
B -- We need to feel that he or she really knows about the subject.
C -- We need to know what we're going to do in class each day.
D -- We need to know how what we do in class has to do with our lives outside of school.
E -- Nothing on this list, but this is where I think he or she needs to improve the most.
F -- See no need for improvement.

Via principal components as the original factor analysis procedure, 53.3% of the variance was accounted for by two factors. The eigenvalues for these two factors was 1.0 or greater. As with the teacher data, a scree plot of eigenvalues supported the principal components factorial method. The principal information from the factor analysis is presented in Table 8.

This table includes the title, factor loadings, and percentage of variance accounted for. The titles of the two factors derived are Achievement and Classroom Management.

Table 8
Factor Analysis Results for Effective Teacher Variables--Students

Factor Variable	Factor Loading	Percent Variance
1 Achievement		38.6
Important to graduate from high school	.738	
Important to take some kind of education after high school	.720	
Important that your teacher helps you to think critically and not just memorize facts	.703	
How important is school to you	.665	
Important that your teacher is available for help outside class time	.637	
Important to pass the course with at least a C grade	.613	
Important to get a job that your business courses prepared you for	.599	
2 Classroom management		14.7
How important are bulletin boards and displays in your classroom in helping you learn	.728	
Does your teacher tell you goals and/or objectives for your class each day	.554	

NB: Only factor loadings greater than plus or minus .500 are shown.

Conclusions

Based on the data gathered, these conclusions are drawn. Both teachers and students agree that an effective teacher is one who genuinely loves learning and helping other learn and reach their goals. The effective teacher is also one who challenges students to do their best. No differences were found between novice and experienced teachers with regard to their perceptions of effective teachers. Students would also support the idea that an effective teacher goes far beyond "what the book says to include other stuff she knows about the subject" and also incorporates a variety of teaching strategies.

Recommendations

The data found in this study may serve as a first step in developing an outline of effective teaching attributes for business education teachers. A logical next step would be to use the naturalistic inquiry method to talk with and perhaps videotape both strong and not so strong business teachers and analyze their teaching styles. These two data sources could be combined to develop a model of effective teaching in business education. This would be extremely useful in methods classes. This kind of information should also provide an impetus for requiring demonstration lessons in methods classes to incorporate a wider variety of teaching strategies.

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Developing and Teaching an Auditing Course in the 1990s[1]

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Abstract

The purpose of this article is to present the results of a research study that obtained the perceptions of auditing practitioners in public accounting firms regarding the content, teaching approach and relevance of the college course in auditing to the needs of first-year staff auditors.

National and local CPA firms within the Chicago area were surveyed and 465 usable responses received. Survey results suggest that the college course in auditing must be reviewed and, as necessary, updated in both topical coverage and teaching approach, to better serve its objective of preparing current and future accounting graduates entering public accounting for their first-year auditing tasks.

Background and Purpose of the Study

The accounting profession is changing and becoming increasingly complex, reflecting an expanded scope of services in a dynamic business and professional environment both domestic and international. Graduates of accounting programs who become entry-level auditors must be equipped to survive in this atmosphere of uncertainty and change.

In 1989 the chief executives of the largest public accounting firms published a report entitled "Perspectives on Education: Capabilities for Success in the Accounting Profession." [CEO's 1989] During this same period the Accounting Education Change Commission (AECC) was created to promote implementation of the recommendations of this report.

"Perspectives on Education" included an examination of the challenges for accounting education and the need for fundamental changes in the accounting curriculum. It stated that "the current textbook-based, rule-intensive, lecture/problem" approach should not survive as the primary means of presentation. Another suggestion made in the report was that "the re-engineering of the accounting curriculum should include a careful evaluation of the topical coverage in all subjects."

Auditing education exists as a subset of accounting education. The current auditing curriculum needs to be redesigned to emphasize the relevant skills of entry-level auditors and to meet the changing needs of the public accounting profession, today and in the future. In order to accomplish these goals, it is critical that input from the accounting profession be obtained.

With respect to the problems of audit education, most research and professional discussion is concerned with the opinions and perspectives of educators and more senior members of CPA firms. However, it is the first-year staff auditor that is most impacted by and dependent upon recently completed college accounting courses, especially auditing. After the first year as a staff auditor, on-the-job experience and in-firm training become operative and tend to compensate for any lack of necessary topical coverage or training in the auditing course.

Since the first-year staff auditor is the primary user of the topics and skills taught in the college-level course in auditing, it seems that the perspective and functions of the first-year staff auditor should be of major importance to auditing curriculum development and pedagogy. However, it is also necessary to view the importance of auditing topics to the job performance of first-year auditors from the perspective of auditors on higher levels in a CPA firm's hierarchy. This perspective is important because auditors on higher levels in a CPA firm have experienced the needs and problems of the first-year staff auditor. They are also in supervisory positions with respect to first-year staff auditors and responsible for evaluating their performance. In addition, hiring decisions are made by people in higher levels within firms and personnel requirements are dictated by these same people.

Given this background, the purpose of this study is to provide information that can be used to improve the course in auditing. Specifically, this study attempts to:

1. Determine which topics usually included in a college-level course in auditing are perceived as important to the job

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performance of first-year staff auditors, entering public accounting today and in five years from today, by auditing practitioners on various organizational levels within local and national CPA firms.

2. Determine the amount of course time to be allocated to each of ten auditing topical areas.

3. Determine the emphasis, conceptual versus practical, for teaching each of ten auditing topical areas.

4. Determine the most appropriate teaching methodology for each of ten auditing topical areas.

5. Determine how practicing auditors perceive their preparation for the audit-related tasks assigned to them during their first year in public accounting based upon their college course in auditing.

The information provided from this study can be useful to:

1. *Auditing Curriculum Developers* -- by providing information that can be used to develop a more relevant auditing curriculum.

2. *Auditing Educators* -- by providing information that can be used to: (1) structure the auditing course to stress the most important auditing topics; (2) help determine the most appropriate teaching technique for auditing topics; and (3) to help determine the proper emphasis, practical or conceptual, for auditing topics.

3. *Auditing Practitioners* -- by providing more adequately trained entry-level auditors; the training burden of CPA firms may be reduced, and practice strengthened.

Data Collection Procedures

Design of the Study

First, the need for the study was established. Second, the purpose and objectives of the study were determined. The third step was to prepare a list of auditing topics. Next, a questionnaire survey instrument was developed. Fifth, the questionnaire was administered, followed by gathering and analyzing the data.

The questionnaire method was selected for data gathering. The primary reason for choosing the mailed questionnaire method was the size and geographic dispersion of the population to be surveyed.

The following advantages and disadvantages have been suggested for the mailed questionnaire approach: Advantages include: (1) data can be collected from larger, more representative samples than by interview; (2) properly designed questions can yield more candid and objective replies; (3) since the respondents answer a uniform set of questions, everyone has the same questions given in the same way; and (4) questionnaires allow the respondent more time to think about answers.

Disadvantages include: (1) one cannot determine whether the respondent is being evasive, is uncomfortable while answering questions, or reluctant to answer questions; (2) one cannot help the respondent understand the questions; and (3) there exists a potential for bias due to nonresponse. Nonresponse is the most serious drawback.

As a result of recognizing the major disadvantages of the questionnaire and considering suggestions for increasing the response rate, the following steps were taken in this study: (1) an attractive questionnaire was designed containing relevant and easily answerable questions; (2) a verbal agreement, from each CPA firm in the sample, of willingness to participate in the study was obtained; (3) a contact person, usually a partner or personnel director, was appointed in each firm to distribute the surveys and follow-up to ensure that they were completed and returned; (4) the survey forms for each of the national CPA firms were personally delivered; (5) pre-addressed and postage paid return envelopes were included with the mailed questionnaires; (6) detailed records of the firms that received the questionnaires were kept; and (7) nonrespondents were followed up.

By following these seven steps, the probability of receiving a low response rate and a biased sample was minimized.

Participants of the Study

The participants of the study were selected from within Chicago area CPA firms that are classified as national or local. The Chicago area was selected for use in the survey because it is a major business center which contains offices of all national CPA firms and a large number of local CPA firms. In addition, the physical proximity of the researcher to the population would enhance the efficiency of the survey process. No other geographical area would afford this opportunity. Individual CPA practitioners were not included in the survey because: (1) as a rule auditing is not a significant part of their practices; and (2) the survey requires responses from auditors on different staff levels of a CPA firm which do not exist within a sole practitioner. Within the CPA firm participants of the study, individuals in the various firm staff levels were surveyed: experienced staff auditor; audit supervisor (senior); audit manager; and audit partner.

Selection of Local Chicago Area CPA Firms and Individual Participants

The selection of local firms in the Chicago area firms located within the 312, 708 and 815 area codes was based upon the firm member mailing list provided by the Illinois CPA Society. The Illinois CPA Society firm mailing list was used because it is complete, current and is oriented toward CPA firms rather than individual members.

First, national and regional firms were eliminated, and firms listed as "& Company," "& Associates" or those with more than one person in the firm name were marked in the listing for potential selection. These firms were selected because they would be more likely to contain sufficient staff, at desired staff levels, to provide individuals in the staff categories to be surveyed. The number of firms in the Chicago area was computed, a sample size to allow for a 10 percent error level was determined, and a systematic sample of the firms with two random starts was taken.

Next, each firm was telephoned by the researcher to obtain the firm's agreement to participate in the survey, to obtain the population of each staff category, to obtain characteristics to be used for non-response bias testing and to appoint a contact person. This procedure was repeated until the cooperation of the necessary number of firms was obtained. The total population in each staff category was computed, and the necessary sample size of individuals by staff category was determined. The sample size of individuals was allocated to each staff category within each firm based upon the firm's proportion of the total population, i.e.,

$$\text{n for each category x} \left(\frac{\text{Population of individual firm per staff category}}{\text{Population of all firms per staff category}} \right)$$

Finally, the number of participants required per staff category was communicated in writing to the contact person in the firm who chose the specific participants and followed-up their completion of the survey questionnaire.

Selection of National CPA Firms and Individual Participants

The firms considered as comprising the national firm category are: (1) those commonly referred to as the "Big 6" CPA firms; and (2) four other firms which have offices throughout the United States.

Each of the 10 firms was contacted by the researcher in order to obtain the firm's agreement to participate in the study, to determine the population of each category to be surveyed, and to appoint a contact person. The population of each category was computed and the sample size for each individual category was determined based upon a 10 percent error level. The sample size by category for each firm was determined by allocating the required sample for each category to each firm based upon the firm's proportion of the total population, i.e.,

$$\text{n for each category x} \left(\frac{\text{Population of individual firm per staff category}}{\text{Population of all firms per staff category}} \right)$$

The number of required participants per category was communicated in writing to the contact person in each firm who randomly distributed, and followed-up completion of the survey questionnaires.

Selection of College-Level Auditing Topics

A list of 50 college-level auditing topics was adapted from a survey originally published in an American Accounting Association research study entitled *Accounting Education Research Monograph No. 3*: "The Core of the Accounting Curriculum for Accounting Majors." This list was updated and validated by reviewing current auditing textbooks and auditing course syllabi. In addition, input of expert auditing educators and practitioners was obtained and incorporated. [Kanter, 1984]

Development of the Survey Instrument

The survey instrument consisted of two major parts. In part I, respondents were asked to rank, on a five point scale, the importance of 50 auditing topics to the job performance of first-year auditors both today and in five years from today. In addition, respondents were asked to rank the importance of the same topics to success on the auditing section of the CPA examination.

Part II contained questions designed to elicit both demographic and opinion data. The respondent was asked to rank 10 auditing topical areas; to determine the most appropriate teaching method for each topical area; to determine the conceptual or practical emphasis for each topical area; and to allocate course time for each topical area. Topical areas rather than specific topics were used to facilitate responses. In addition, respondents were asked for their opinion regarding the adequacy of their preparation for first-year auditing practice.

Administration of the Survey Instrument

The survey instrument was administered after computing the required sample size per staff category per firm. The required sample size number of questionnaires was mailed to the contact person identified at each of the local CPA firms and was hand delivered to the contact person in each of the national CPA firms.

In addition to instructions included in the survey instrument, a letter of instruction, including the desired distribution of questionnaires per staff category within each firm, was included with the questionnaires. The contact person was also asked to provide demographic data to be used to test whether the sample truly represented the underlying population from which it was drawn. A pre-addressed, postage paid envelope was included with the distributed questionnaires to facilitate their return. Each questionnaire was serially numbered to allow accounting for the questionnaires and to determine nonrespondents for follow-up purposes.

Follow-up Procedures

Approximately one month after the questionnaires were distributed, those firms that had not responded were telephoned by the researcher. This follow-up resulted in the return of an acceptable number of questionnaires as shown in Table 3.

Representativeness Testing Procedures

In order to test the representativeness of the samples, matching characteristics were used. These characteristics included sex, CPA certification, and college attended by the respondents. Actual sample responses were compared to data about the entire population provided by the contact person at each firm. The proportion of each characteristic in each sample was compared to the proportion of each characteristic in each population to test for representativeness.

Analytical and Statistical Procedures

Responses to the survey instrument were processed using the Statistical Package for the Social Sciences (SPSS). Responses regarding the importance of auditing topics were tabulated and the mean importance rating of each topic was computed. A topic with a mean greater or equal to 3.0 was considered important. To determine if significant differences existed between the importance of topics today and in five years from today, correlated t-tests were made.

To test for significant differences in perception between respondents in local firms and those in national firms, a one-way Analysis of Variance (ANOVA) was used. Significant differences were considered to be obtained if the computed f ratio yielded a probability of less than .05.

To test for differences in the perceptions of the importance of auditing topics today among experienced staff, supervisors, managers and partners in local and national CPA firms, a one-way (ANOVA) was used.

Data Analysis

Demographic Data

Table 1 shows the breakdown of respondents by sex. The ratio between male and female respondents would indicate that public accounting remains male dominated.

Table 1
Sex of Respondents

	Frequency (n = 465)	Percent
Male	326	70.3
Female	138	29.7
	465	100.0

Table 2 shows the CPA Certification of respondents. Clearly the majority of respondents are CPAs which suggests the importance of obtaining a CPA certificate for accounting graduates entering public accounting.

Table 2
CPA Certification of Respondents

CPA?	Frequency (n = 465)	Percent
Yes	396	85.2
No	69	14.8
	465	100.0

Table 3 shows the breakdown of respondents by type of firm. Responses between these two types of CPA firms were reasonably balanced.

Table 3
Frequency of Response by Type of Firm

Firm	Frequency (n = 465)	Percent	Rate
National	253	54.4	82.1
Local	212	45.6	70.2
	465	100.0	

Table 4 shows the breakdown of respondents by their position within CPA firms. Responses were somewhat skewed in the supervisor position. This may result from local CPA firms not always distinguishing clearly between experienced staff and supervisors.

Table 4
Position Within Firms of Respondents

Position	Frequency (n = 465)	Percent
Experienced Staff	98	21.1
Supervisor (Senior)	150	32.3
Manager	108	23.2
Partner	109	23.4
	465	100.0

Opinion Data

Table 5 shows topics rated as important today by all respondents. A topic was considered important if its mean rating was 3.00 or higher. Of the 50 topics which appeared in the survey questionnaire only 16 were rated as important. Thus 34 topics or 68% of the topics normally included in an auditing course were considered unimportant for first-year staff auditors entering public accounting today. Generally, items rated as important had a distinctly practical orientation.

Table 5
Ratings of the Importance of Auditing Topics to the Job Performance of First-Year Staff Auditors Entering Public Accounting Today in Mean Rank Order

Topic	Rank	Mean
33. Working papers	1	3.612*
35. Substantive tests	2	3.597*
30. Types of audit evidence	3	3.400*
50. Use of micro-computers	4	3.384*
6. Generally accepted auditing standards (GAAS)	5	3.361*
31. Relative strength of types of audit evidence	6	3.354*
34. Tests of controls	7	3.341*
23. Evaluation of the internal control structure	8	3.226*
19. Principles of internal control	9	3.206*
39. Audit objectives	10	3.172*
20. Narrative description of the internal control structure	11	3.166*
8. Professional rules of conduct (ethics)	12	3.146*
18. Relationship of GAAS	13	3.112*
42. Client relations	14	3.095*
32. Subsequent events	15	3.060*
24. Assessing control risk	16	3.037*

Table 6
Auditing Topics Rated as Important to the Job Performance of First-Year Staff Auditors Entering Public Accounting in Five Years in Mean Rank Order

Topic	Rank	Mean
50. Use of micro-computers	1	3.656*
35. Substantive tests	2	3.613*
33. Working papers	3	3.573*
30. Types of audit evidence	4	3.471*
31. Relative strength of types of audit evidence	5	3.445*
6. Generally accepted auditing standards (GAAS)	6	3.432*
23. Evaluation of the internal control structure	7	3.391*
19. Principles of internal control structure	8	3.333*
8. Professional rules of conduct (ethics)	9	3.299*
39. Audit objectives	10	3.294*
48. Internal control in an EDP environment	11	3.256*
49. Computer-assisted auditing	12	3.254*
18. Relationship of GAAS to the internal control structure	13	3.246*
42. Client relations	14	3.238*
20. Narrative description of the internal control structure	15	3.237*
24. Assessing control risk	16	3.213*
32. Subsequent events	17	3.155*
25. Modifications in audit program based on control risk	18	3.148*
2. Users' expectations regarding the auditor's role	19	3.081*
28. Sample size and representative samples	20	3.080*
21. Questionnaire description of the internal control structure	21	3.053*
13. Standard audit report	22	3.042*

Table 6 shows topics rated as important in five years by all respondents. A topic was considered important if its mean rating was 3.0 or higher. Of the 50 topics originally considered only 22 were rated important in five years, an increase over the 16 topics considered important to first year-staff auditors today. Still 28 topics or 46% of the topics included in a typical auditing course are considered unimportant on the future dimension. Of the 16 topics considered important today only one topic, number 34, test of controls, was not considered to be important in five years. The additional seven topics rated as important in five years basically reflect an increased emphasis on computer systems.

Auditing Course as Preparation for First Year Auditing Tasks

All respondents were asked to indicate on a four-point scale whether they agreed or disagreed that they were adequately prepared to perform the audit related tasks assigned to them during their first year in public accounting based on their college course in auditing.

The majority of respondents, 249 or 53.5%, disagreed that they were adequately prepared while 216 or 46.5% of the respondents agreed. Thus, a majority of respondents did not agree that they were adequately prepared for their first year auditing tasks.

Summary of the Auditing Course

All respondents were asked for their opinion about four dimensions of an auditing course: the importance of each of ten topical areas; the percent of class time to be allocated to each topical area; the primary teaching method for each topical area; and the conceptual or practical emphasis for each topical area.

Table 7 shows how respondents rated each of ten topical areas and the percentage of an auditing class which they would allocate to each topical area. Their responses show a consistency between importance and allocation of class time. The top three topical areas, which are distinctly procedural and oriented toward what first year staff auditors do, account for 51.4% of class time. It is interesting to note the importance of topical area four, ordinarily defined as ethics, to the first-year staff auditor.

Table 8 shows the preferred teaching method and teaching emphasis for each topical area. While the lecture method is still important, respondents tend to prefer a problem solving or case approach. Also, respondents prefer a practical rather than conceptual emphasis for six of the ten topical areas.

Table 7
Class Time Allocation and Importance Ranking of Topical Areas in Mean Rank Order

Topical Area	Mean	% of Class Time
1. Auditing Procedures	7.460	20.06
2. Audit Evidence	7.169	17.17
3. Consideration of the Internal Control Structure	6.453	14.21
4. Professional Responsibilities of the Auditor	4.725	9.17
5. Audit Reports	4.512	9.13
6. Auditing in a Computer Environment	4.154	8.24
7. Inference in Auditing	3.887	7.54
8. Audit Administration	2.486	5.74
9. Extensions of the Attest Function	2.302	5.01
10. Introduction to the Public Accounting Profession	2.013	4.13
		100.00

Table 8
Preferred Teaching Method and Emphasis by Auditing Topical Area

Topical Area	Preferred Teaching Method**	Conceptual (C) or Practical (P) Emphasis		
		C	P	
a. Introduction to the Public Accounting Profession	1	339	126	C
b. Professional Responsibilities of the Auditor	2,5	320	145	C
c. Audit Reports	2,5	181	284	P
d. Consideration of the Internal Control Structure	4,5	137	328	P
e. Inference in Auditing	2,4	213	252	P
f. Audit Evidence	4,5,7	71	396	P
g. Audit Procedures	4,7	38	427	P
h. Audit Administration	2	235	235	C
i. Extensions of the Attest Function	2	290	175	C
j. Auditing in a Computer Environment	4,6	140	325	P

***Teaching Methods*
1. Drill (recital, questions and answers, repetition in unison)
2. Problem Solving (application of procedures or analysis)
3. Case Discussion (discussion of real situations)
4. Tutorial (one student with one instructor or computer assisted instruction)
5. Practice Set (completion of auditing forms and following audit procedures)
6. Lecture (professor narrates related set of messages to students with little or no interruption on their part)
7. Role Playing (students perform in a fact situation)

Findings

Based on the results of this study the following appear to be valid at this time:

A significant number of topics typically included in a course in auditing are not perceived as important to the job performance of staff auditors entering public accounting today or in five years.

A majority of respondents do not agree that they were adequately prepared for the audit-related tasks they were assigned during their first year of auditing practice.

A mainly practical rather than a conceptual orientation with an emphasis on problem solving is preferred by practicing auditors for the course in auditing.

Conclusions and Recommendations

Based on the findings of this study, it is reasonable to conclude that the auditing course should be updated to emphasize those topics which are important today and those which will become important in the near future. Also, current teaching methods and topical emphasis should be reviewed for consistency with the findings of this study.

It is recommended that those responsible for auditing curriculum first set specific objectives for the course i.e., oriented toward theory or toward first-year audit practice. Once course objectives are set, the information presented in this study can be used to optimize the course in auditing so that it is relevant to the needs of accounting students and practitioners, today and in the future.

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Disability Disclosure in Employment Communication: What Human Resource Managers Advise

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Abstract

Members of the Society for Human Resource Management were surveyed to determine what advice they would give about disability disclosure. Direct disclosure at the employment interview was the method recommended by the majority. There was a tendency, however, to favor withholding disclosure when a disability was not clearly observable. Neither industry type nor organization size was a significant factor when disclosure was recommended before an interview; both were significant factors when disability disclosure at or after an interview was recommended. The majority of respondents perceived that their organizations provide a supportive working environment for people with disabilities.

Introduction

Today over 43 million Americans have disabilities. The Americans with Disabilities Act of 1990 (ADA) prohibits employment discrimination against them. However, legislation does not reduce the potential for tension or discomfort between an interviewer and a candidate with a disability. The discomfort could arise from legal, social, or personal factors: uncertainty over the added dimension of the ADA, potential impoliteness over addressing a physical difference, or fear of the unknown.

This study focuses on human resource professionals. The purpose is to investigate their attitudes about disability disclosure and their perceptions of their organization's environment as it relates to workers with disabilities. Changing legal and social environments lead to the prediction that human resource professionals will say that their organizations provide a good working environment for people with disabilities. In addition, it is hypothesized that human resource professionals will recommend that direct statements about the nature of a disability be given prior to an employment interview. Furthermore, because disabilities can range from obvious physical impairments such as the need to use a cane to less obvious, chronic ailments such as epilepsy, a significant interaction effect between the nature of recommendations for self-disclosure and type of disability is expected.

Literature Review

A literature survey reveals that more research has been done in the area of human behavior in interactions with people who have disabilities than in the area of disability disclosure, in general or as it relates to employment communication.

Human Behavior Research

Typically, studies in this category focus on the reactions of individuals to people with disabilities during interactions outside an employment interview situation. Although the results are inconsistent and are tangential to the primary purpose of this study, by inference they provide insights on factors that have the potential to influence employment decisions.

Much of the earlier research regarding people with disabilities demonstrates the effects of negative stereotyping (MacDaniel, 1969; Noonan, Barry, & Davis, 1970). For example, physical disabilities reduce the attractiveness of people and make direct interactions with them uncomfortable (Langer, Fiske, Taylor, & Chanowitz, 1976). More current research, however, shows that attitudes may be changing. Subjects in a study conducted by Christman and Slaten (1991) showed a predisposition to behave positively when assessing the employment potential of people with physical disabilities.

Research shows that not only do nondisabled persons feel discomfort in the presence of disability but that disabled persons do as well. Focusing on the hearing impaired, Hurt and Gonzalez (1988) report that both hearing and hearing-impaired subjects have increased levels of anxiety when interacting with someone who has a hearing impairment. As a result of these feelings, interactions with people who have disabilities result in a number of consistent behavioral biases on the part of nondisabled persons (Kleck, 1968; Kleck, Ono, & Hastof, 1966; Melgoza, Roll, & Baker, 1980; Selby & Calhoun, 1980).

While some researchers report finding negative attitudes toward people with disabilities, other investigators report positive

perceptions caused by disabilities. For example, counselors with disabilities were seen by subjects to have developed unique coping strategies that made them more empathic. These strategies give counselors with disabilities therapeutic advantages over nondisabled counselors (Brabham & Thoreson, 1973; Mallinckrodt & Helms, 1986; Mitchell & Allen, 1975). Using photographs of counselors with disabilities, Mitchell and Frederickson (1975) found that subjects generally preferred counselors with disabilities over nondisabled counselors. McKay, Dowd, and Rollin (1982) support these findings but only when the disabled counselors are depicted as having high social influence and empathy. Otherwise, there are no enhancement effects.

Research on compliance behavior also indicates that a person with a disability is more likely to gain compliance than a nondisabled person particularly when the compliance does not require additional face-to-face contact (Doob & Ecker, 1970).

Because research shows that interactions with people who have disabilities can produce either positive or negative reactions and no consensus has been reached, it would be tempting to discount all previous literature. In light of changes in the educational, social, and legal environments that have occurred during the past decade, however, that cannot be done. The literature, incomplete as it may be, deals with attitudes in human transactions. Human attitudes evolve more slowly than legislation, and human behavior is based on attitudes.

Legally, the ADA prohibits discrimination in four areas: employment, public services such as transportation, public accommodations, and telecommunications. In the employment area, the Act became effective July 26, 1992, for employers with 25 or more full-time workers; the full-time employee number drops to 15 effective July 26, 1994. Specifically, the employment section of the Act prohibits covered employers from discriminating against a "qualified individual with a disability" in regard to job applications; hiring; advancement; discharge; compensation; training; or other terms, conditions, or privileges of employment. Ignoring the mandates can result in substantial fines and legal action. Companies cannot afford to wait for crisis situations to develop before establishing specific hiring policies.

Research indicates that people may express more acceptance of people with disabilities than they feel in order to appear more socially acceptable (Harris & Meyer, 1973). As a result, interviewers are more likely to exhibit helping behaviors and greater sympathy in response to a need to gain social acceptance. Consequently, even though negative stereotypes of disabled people may exist, it is predicted that changes in the educational, social, and legal environment cause employers to strategically manage the interviewing and employment of disabled persons. This leads to the first hypothesis:

H1: Regardless of an organization's type or size, human resource managers will report that their organizations provide a good working environment for employees with disabilities.

Disclosure Research

Provision of a good interviewing environment requires that accommodations be made for people with a variety of disabilities. Accommodations such as parking, building and bathroom access, or greeter/guide may need to be discussed before an interview. Direct disclosure of a disability prior to an interview is crucial to making such accommodations.

In a study by Huvelle, et al (1984), twenty-one professional/managerial employees who have visual/auditory, or orthopedic disabilities offered their opinions on whether and when disability disclosure should occur. Although these individuals reported perceiving the issue of disclosure as complex and as having profound personal and professional implications, they favor disclosing the disability before the interview. Doing so minimizes the chance of psychologically surprising and overwhelming an unprepared interviewer. This finding was supported by Wheeless (1978) who proposed that self-disclosure communication is critical in developing trust while establishing effective interpersonal relationships. Based on these findings, the second hypothesis of this study is:

H2: Regardless of an organization's type or size, human resource managers will prefer self-disclosure of a disability prior to the employment interview.

Even though we feel that the environment has shifted in favor of direct, open communication prior to the interview, we do not discount the wide range of disabilities in the workforce. Some disabilities have social stigma attached to them. Rickard, Triandis, and Patterson (1963) found that ex-prisoners, former mental patients, and people who have epilepsy experience great prejudice. One might speculate that today those who test positive for HIV would be included within this group. Research also indicates that there is an inverse relationship between sympathy and the severity of a disability. A severe disability may act to reduce attraction, with facilitative effects decreasing as the severity of the disability increases (Samerotte and Harris, 1976). Moreover, there is often the fear of the unknown and unseen. Consequently, observable disabilities (e.g., blindness) are often easier to cope with than hidden disabilities (e.g., epilepsy). Therefore, the following hypothesis is proposed:

H3: There will be a significant interaction effect between the type of disability and the amount of disclosure. The more directly observable the disability, the greater the recommendation for direct disclosure.

Methodology

Sample

A survey research design was selected as the most appropriate method for collecting information about the attitudes of a large group of people. A stratified random sample of 100 participants was selected from each of the six geographic territories listed in the *1992 Directory of Who's Who in HRM*, an annual sourcebook published by the Society for Human Resource Management (SHRM). All of the subjects were located within the continental United States. Each organization was represented by only one respondent.

Questionnaire

The survey draft was reviewed by the director of the campus unit that works with students who have disabilities, the campus Affirmative Action Officer, a business writing student, a campus counselor who works with students with disabilities, and a plant services supervisor. The student, the counselor, and the supervisor have one or more disabilities. After minor changes were made, the survey instrument was pretested with three human resource professionals and three small business owners. Finalized questionnaires were mailed with stamped, self-addressed return envelopes. A followup mailing was sent to nonrespondents.

The questionnaire was mailed to a random sample of the human resource professionals, self-administered, and returned upon completion. Information linking individual surveys to their respondents was destroyed when the followup letters were mailed. The survey was designed to elicit from respondents their attitudes toward disclosure of a variety of disabilities and their feelings about their organization's environment for disabled persons.

The questionnaire covered seven general areas. The first six areas assessed the respondents' attitudes toward disclosure of physical, learning, auditory, visual, chronic, and other (e.g., psychiatric, chemical dependency) disabilities. The human resource managers in the sample were asked to rank in order of importance ten strategies for disclosing the various disabilities. The ten strategies included nondisclosure as well as a variety of direct and indirect disclosure options. Each section also assessed respondents' perceptions of the company's working environment for people with disabilities and respondents' comfort at working with people with disabilities. A five-point Likert scale ranging from strongly disagree to strongly agree, with neither disagree nor agree being the center point, was used to measure these perceptions.

The last section contained a series of questions to obtain personal and organizational characteristics. In addition to demographic questions, respondents were asked what events addressing provisions of the ADA they had attended as well as what disabilities they, or those they know, possess. Organizational questions addressed the size and type of the organization, recruiting/hiring experience, and the amount of influence the respondent had in hiring decisions.

Analysis

Data analysis proceeded in three stages. Initially, frequency values for each type of disclosure statement were examined in order to determine which disclosure strategy was recommended by the majority of the respondents. Second, disclosure statements were grouped into categories of (a) direct versus indirect and (b) before interview versus at/after interview. Chi-Square analyses were performed to determine statistical significance of disclosure before interview versus disclosure during/after interview when controlling for organization size and type. Chi-Square analyses were then used to investigate interaction effects of type of disability and amount of disclosure. Third, the mean values of the responses for organizational environment were compared with organizational size and type. Cramer's statistic was used to determine the strength of the relationship among the variables.

Results

Demographic Information

Responses were received from 195 human resource managers; this constitutes a 33 percent overall return rate, with a response rate somewhat higher for women (58 percent) than for men (42 percent). Eighty percent of the respondents are between the ages of 26 and 50. The respondents are well-educated; 54 percent have bachelor's degrees and 28 percent have master's or doctoral degrees, primarily in the business and human resource areas. Thirty percent of the respondents earned their degree within the past decade. Human resource professionals from the Midwest are slightly over-represented in the sample (23 percent); overall, however, the sample demographically represents human resource professionals throughout the United States.

When asked about the types of events addressing provisions of the ADA they had attended within the past three years, more respondents chose professional seminars (82 percent) than chose in-house seminars (39 percent); only 8 percent report having attended college/university courses about the ADA. Ten percent indicate they had not attended an ADA event.

While only 29 percent of the respondents indicate they have a disability, nearly 96 percent of those who responded know someone who has a disability. Systemic disorders or chronic conditions (9 percent) and vision disability (8 percent) are the most frequently listed respondent disabilities; physical (76 percent) is the most frequently listed disability of those whom respondents knew. Hearing (46 percent), learning (44 percent), and systemic/chronic (42 percent) disabilities are reported with near equal frequency. When identifying who of their acquaintance has a disability, respondents most often report

that the person was a professional acquaintance (70 percent); others frequently cited are friend (55 percent), family member (54 percent), and social acquaintance (47 percent).

The majority of the respondents indicate that they are employed in positions directly relating to employment and human resources (76 percent), have been recruiting/interviewing prospective employees for over ten years (53 percent), and are responsible for interviewing under 30 people per month (88 percent). Eighty-four percent indicate that they influence at least a quarter of the hiring decision.

Eight types of organizations are represented, with 43 percent of the respondents coming from manufacturing; 13 percent from both insurance and health; 10 percent from retail; and the rest from education, government, law, and the computer industry. Organization size ranges from fewer than 50 employees to over 5000 employees, with the modal size (29 percent) being between 201 and 500 workers.

Working Environment

The mean value for the perceived working environment for disabled people ranged from 3.741 for people with physical disabilities to 3.333 for people with learning disabilities. Other mean values were 3.368 for people with vision impairments, 3.377 for people with disabilities classified as "other," 3.576 for people who have hearing disabilities, and 3.730 for those with systemic/chronic conditions. Given the five-point Likert scale, these mean values indicate that the respondents were inclined toward agreeing that their organizations provided a comfortable working environment for people with disabilities. Chi-Square analyses indicated that this attitude was not related to the organization's size or type. As a result, hypothesis one which stated that human resource managers would report a good working environment for the disabled regardless of organization size or industry type was confirmed.

Direct Disclosure

Frequency distribution of the various disclosure strategies clearly indicates that, regardless of the disability, human resource managers favor a direct statement at the time of the employment interview. In the case of hearing disability disclosure, 56.7 percent of the respondents recommend direct disclosure at the interview. This method of disclosure was also recommended for vision disabilities, (53.1 percent), for other disabilities (50.5 percent), learning disabilities (44.8 percent), for physical disabilities (39.5 percent) and for systemic/chronic conditions (37.5 percent). Chi-Square tests for independence were performed. No statistical significance was found when either organizational size or industry type was considered and when recommendations were made to disclose BEFORE the interview; therefore, the second hypothesis is not supported. However, the organization's size and its industry type were significant ($p<.09$) when disclosure was recommended AT or AFTER the interview. Human resource managers recommend disclosing a disability at the time of an interview and that recommendation is dependent upon the organization's size and its industry type.

Type of Disability and Amount of Disclosure

Hypothesis three states that the more directly observable the disability, the greater the recommendation for direct disclosure. In order to test this assertion, the disabilities were grouped into those that are directly observable (vision, physical, and hearing) and those that are less observable or unobservable (learning, chronic, and other). Recommended strategies for the two groups were then compared. Although there was a slight tendency not to favor directly disclosing less observable or unobservable disabilities prior to a work-related physical examination, this tendency was not statistically significant at the $p<.10$ level. Since human resource managers favor direct disclosure regardless of type of disability, the third hypothesis is not supported.

Summary

Human resource managers are inclined to agree that their organizations provide a supportive working environment for people with disabilities. Note, however, that this study does not attempt to determine what constitutes a supportive working environment.

Human resource managers recommend that people with disabilities be forthright in disclosing such disabilities and that they do so at the time of an interview. Although this finding contradicts findings of earlier research, it must be noted that the source of the advice differed. Earlier research focuses on recommendations offered by people with disabilities; this study focuses on advice offered by hiring officials.

Although not statistically significant, there is a slight tendency to advise job seekers to conceal disabilities that are difficult or impossible to observe.

Recommendations

Based on the literature and the findings of this study, the following recommendations are offered:

1. Using people with disabilities as a resource, organizations should work to define what "supportive working environment" means in the context of their industry. Once such a definition has been established, steps should be taken to communicate about and create that environment.

2. Both schools and hiring organizations should assume responsibility for assuring that those involved in the hiring process are able to elicit disability disclosure in a comfortable manner within legal bounds.

3. Educators and employment counselors should work with job seekers who have disabilities to make them aware of the

importance of honest, timely, and considerate disability disclosure.

4. Educators and employment counselors should work with job seekers who have disabilities to develop techniques for stigma management.

5. Research should be conducted to determine why human resource managers recommend that disabilities that are less observable or unobservable not be disclosed. Is it fear of reprisals against workers with such disabilities? Is it fear that organizations will incur long-term costs associated with health care? Is it because society attaches more negative stereotypes to these disabilities? Is it because the tendency to fear the unknown overshadows logic? Once the reasons for such attitudes are known, strategies should be developed to overcome them.

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Document Origination and Factors Contributing to Selection of Origination Method: Implications for Business Curricula

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Abstract

The purpose of this study was to determine document origination methods used by business professionals, relationships of factors that influence selection of document origination methods, and implications for business curricula.

Major conclusions: Business professionals create memos more frequently than they create other documents; they use word processing software on micro-, mini-, or mainframe computers as their primary document origination method; and they feel their best preparation for document origination was learning on their own.

Findings imply that business curricula may need restructured if instructors are to adequately prepare all business students for business communication.

Introduction

No facet of undergraduate business education has been subject to more change in recent decades than has the business communication component (Leonard, 1988). A multitude of events has revolutionized business communication processes. New technologies, integration of technologies, more information workers, changing roles of secretaries, and a renewed emphasis to increase productivity in the service industry are factors affecting methods used by business professionals to originate business documents.

Word processing is no longer the exclusive domain of the secretary but is an essential component for all office personnel including executives (Roderick, 1987). Today's managers often perform clerical tasks once reserved for secretarial support personnel. Changes in document origination methods have created a demand for all business students to develop skills necessary to function in a computer oriented environment.

For business teachers to plan relevant business communication activities, they need knowledge of current business practices. To prepare business students with skills needed for entry-level jobs as well as for advancement to better positions, "educators must be aware of the changing society and accordingly be willing to update, innovate, propose new curriculums, and use teaching strategies that relate school learning to the world of work" (Ettinger, 1989, p. 109).

Purpose of the Study

The purpose of this study was to obtain information that could contribute to a better understanding of communication processes used by business professionals.

Statement of the Problem

The problem was to determine: (a) document origination methods used by business professionals, (b) relationships of factors that influence selection of document origination methods, and (c) implications for business curricula.

Rationale for Study

As changes occur in document origination processes, research is needed to provide guidance to business instructors who plan and implement business curricula. Fundamental structural changes in the world of work must be met by fundamental structural changes in business education (Daggett & Jaffarian, 1990). Business educators must teach relevant business communication skills; before they do this, they must develop an awareness of current communication skill needs of businesses (Scott, 1988).

Population

The population consisted of Master of Business Administration graduates from 1967-1991 from a major midwestern university. All MBA graduates for whom addresses were listed in the files of the University's Office of Alumni Affairs were included in the population. After names were eliminated because of incomplete information or out-of-the-country addresses, the population consisted of 529 usable names. Because of anticipated low response rate and the desire to establish minimum power of .51, every other usable name appearing on the alumni printout was selected for a total of 265 subjects.

Research Procedure

A three-part questionnaire was developed to collect data concerning document origination methods, factors that contribute to

origination methods, and demographic data about respondents. To test the questionnaire, a pilot study was conducted using 20 subjects from the master list who were not selected as part of the sample. Several changes were made in the questionnaire as suggested by the pilot group.

Questionnaires with cover letters and stamped return envelopes were mailed to the selected sample on April 1, 1992. A follow-up mailing was completed approximately 3 weeks later. One hundred sixty usable questionnaires were received for a 60% return rate.

Data Tabulation and Analysis

Data from questionnaires were coded and entered on computer scan sheets. Using the Statistical Package for the Social Sciences (SPSS), frequencies and percentage were generated for all questionnaire items. The SPSS subprogram CROSSTABs was used to generate cross-tabulation analysis for selected items in Section C and all questions in Section A of the questionnaire.

The chi-square statistic was used to determine relationships between methods of document origination for all document types and age, gender, undergraduate degree, position in company, type of organization, and years of service with company. Cramer's V coefficients were calculated to assess strengths of relationships. The Fisher's Exact Test was used for chi-square tables with expected values of less than 5 in all cells.

Findings

The 120 male and 38 female respondents were primarily in the 31- to 40-age group. Respondents were from a variety of undergraduate programs; however, marketing and accounting represented the largest groups. The MBA was the highest degree attained by 139 (86.9%) respondents. Respondents were primarily in middle management (49 or 30.6%) or professional staff (47 or 29.4%) positions. Manager was the most frequently listed title; analyst was the second most frequently reported title.

Service was the most frequently listed company classification with manufacturing being the second most frequently listed company classification. Fifty-two (32.5%) respondents had been with their company 5 years or less and 90 (56.2%) respondents had been in their current position for 5 years or less.

Specific research questions along with findings follow:

Question 1: What types of business documents are created by business professionals and how frequently is each type created?

Business professionals reported they create memos more frequently than any other documents. Memos are created often by 84 (52.5%) respondents and occasionally by 35 (21.9%) respondents. Letters are the second most frequently created documents with 52 (32.5%) respondents originating letters often and 36 (22.5%) respondents originating letters occasionally. Reports are created often by 39 (24.4%) respondents; and forms are created often by 25 (15.6%) respondents.

Question 2: What document origination methods do business professionals use to create different business documents?

Respondents use the keyboard to originate and send their own letters, reports, memos, and forms more frequently than any other origination method. Keyboarding is used ``often'' as the method of origination by 62 (38.7%) respondents for letters, 66 (41.2%) respondents for reports, and 63 (39.4%) respondents for memos.

Handwriting for someone else to complete is the second most frequently listed method of origination. Letters are handwritten for someone else to complete "often" by 37 (23.1%) respondents, reports by 33 (20.6%) respondents and memos by 35 (21.9%) respondents. "Rough draft keyed for someone else to complete" ranked third. Less than 10 respondents indicated they use dictation to a machine or dictation to a secretary as their origination method for any type of business document.

Question 3: What technology is available for originating documents?

Respondents indicated they have word processing on micro-, mini-, or mainframe computers available for document origination. One hundred four (65%) respondents have microcomputers with word processing software; 75 (46.9%) respondents have word processing through a mini- or mainframe computer. Several respondents included electronic mail in this response. Some respondents have micro-, mini-, and mainframes available for document origination.

Question 4: What administrative support do business professionals have for creating business documents?

Sixty-seven (41.9%) respondents indicated they share a secretary with coworkers. Twenty-six (16.2%) respondents stated they have a full-time secretary, and 12 (7.5%) respondents indicated they have little secretarial support. Only 5 respondents indicated word processing personnel are available for creating business documents.

Question 5: How do business professionals perceive the training they received for creating business documents?

Forty (43.9%) respondents indicated they perceive their best training as "learned to create business documents on my own." Only 29 (18.1%) respondents perceived their college business communication course as the best preparation for creating business documents.

Question 6: Are changes in methods of creating business documents anticipated by business professionals?

Respondents indicated that the greatest change anticipated in document creation in the next 2 to 3 years is more communication through electronic mail and less administrative support.

Respondents feel they will be expected to or will choose to prepare their own documents on microcomputers or mini- or mainframe computers during the next 2 to 3 years and the next 4 to 10 years.

Respondents anticipate they will communicate more through electronic mail and will have voice recognition input technology during the next 4 to 10 years.

Question 7: What factors influence document origination methods?

1. Respondents agreed that administrative support personnel are available to keyboard documents from longhand notes; however, support personnel are not available to take shorthand dictation.

2. Respondents agreed that business communication classes should include instruction in originating business documents using word processing software on micro-, mini-, or mainframe computers.

3. Respondents agreed that their desire to maintain control of their own documents has influenced their choices of document origination methods.

4. Respondents agreed that electronic mail capabilities will likely influence choices for document origination in the future.

5. Respondents agreed that if they are in a hurry for a document, they keyboard their own documents.

6. Respondents indicated that productivity in producing business documents is an issue in their company.

Question 8: Is there a relationship between the document origination methods business professionals use and their (a) age; (b) gender; (c) undergraduate degree; (d) current position within organization; (e) type of organization in which employed; and/or (f) years of service in company?

Age. Findings show a relationship at the .05 alpha level between document origination methods and respondents' age for letters, reports, and memos under the headings "keyboard yourself and send." Respondents between the ages of 31 and 40 tended to keyboard their own letters, reports, and memos more frequently than did other respondents.

Gender. A statistically significant relationship existed at the .05 alpha level for gender and "rough draft keyed for someone to complete" for forms and "keyboard yourself and send" for letters. Males tended to use these document origination methods more than females.

Undergraduate major. No statistically significant relationships existed at the .05 alpha level for document origination methods and undergraduate majors.

Respondents' positions. In two categories, "handwrite for someone else to complete" and "keyboard yourself and send," a statistically significant relationship existed at the .05 alpha level. Both senior managers and middle management respondents tended to "handwrite for someone else to complete" while professional staff and first-line supervisors more often "keyboard and send own" letters, reports, and memos.

Respondents' Company Classification. Forms under "dictate to a machine" and letters under "handwrite for someone else to complete," show a statistically significant relationship with classification of company. Letters are "handwritten for someone else to complete" more often by respondents in manufacturing companies than respondents from other types of companies.

Respondents' Years of Service with Company. Reports under the heading "handwrite for someone else to complete" was the only entry in which a relationship existed at the .05 alpha level. Respondents employed with companies for the 6-10 year period tended to "handwrite their reports for someone else to complete" more frequently than did other respondents.

Implications for Business Curricula

This study was conducted to provide information which could have a direct and explicit bearing on business curricula. The following implications, based on the findings, appear to be prudent.

1. Business instructors can better prepare students for document origination by teaching all business students to compose writing assignments at the keyboard.

2. All business students should become proficient in productively using word processing software on micro, mini, or mainframe computers.

3. Business curricula may need to be restructured to include preparation in all areas of document preparation for all business students.

4. Business communication classes need to provide relevant learning activities that simulate actual business practices if future graduates are to perceive business communication classes as "best" preparation for document origination activities.

5. Findings suggest that business communication has changed. Business instructors should take a leadership role in design-

ing business curricula to prepare all business students to become productive business professionals.

Recommendations

Based upon the findings of this study, several recommendations are offered.

1. Students should be taught effective techniques for originating documents at the keyboard.

2. All business students regardless of major should be taught to produce effective electronic messages. Composition of electronic messages may differ from standard hard copy messages used in traditional correspondence.

3. Research is needed on a continuing basis to provide business instructors with knowledge of current and expected trends in business communication in the business world. Business instructors need to maintain a direct linkage with business professionals to keep business communication learning activities consistent with communication activities expected of business professionals in the business world.

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The Effect of a Report Reader's Cognitive Style on Decision Making and the Use of Graphic Aids in a Report

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Abstract

There is a lack of research concerning the role of cognitive style in graphics use. The problem of this study was to primarily investigate whether any relationship between graphic aids and decision-making was modified by the cognitive style of the report reader.

Based on the findings, (1) although neither cognitive styles alone nor graphic aids alone made a significant difference in decision-making ability, (2) when considering graphic aids and cognitive style in conjunction with each other, (a) a significant difference in decision making was found, and (b) cognitive style was responsible for the significant difference.

Recommendations based on the conclusions are made.

Introduction

The orientation of writing courses must change as the world around us changes. Because more emphasis is being given to individualizing the curriculum, the writing curriculum should adapt. The following study attempts to individualize graphic aid learning for report writing using cognitive style as the basis for the individualization. The process includes the following:

(1) assessing the cognitive style of a report reader.

(2) measuring the decision-making ability of the reader using graphic aids as the decision tool.

(3) comparing cognitive styles to graphic aids used, as well as decisions made.

The above process determined if individual learning styles and the type of graphic aid used affected decision-making ability.

Cognitive style and graphic aids were chosen as variables to consider because they are both important to decision making when writing reports. Cognitive style is important since research indicates that a person's cognitive style affects perception and use of information, i.e. , how one's internal vistas' affect perception and use of graphic aids in reports. Graphic aids are also important since increasingly massive amounts of data that managers deal with daily and graphic aids can be easily created.

Statement of Problem

The problem of this study was to investigate primarily (1) if any relationship between graphic aids and decision-making was modified by the cognitive style of the report reader, and secondarily (2) the relationship between graphic aids and the decision-making ability of a report reader.

Literature Review

The following section provides a review of the literature and research pertinent to the investigation into the relationship of cognitive style, decision making, and graphic aids.

Cognitive Style

Studying the cognitive process underlying the use of graphics in decision making may be the most difficult research direction to pursue since the variables of interest can only be inferred and cannot be directly observed. Studies suggest that format used to present information affects the viewer's processing of that information, recall, choice behavior, and task performance; presentation format affects the strategy used by an individual to learn that information. However, research does not consider graphic methods of data display, only alphanumeric. Nevertheless, the findings suggest that the use of graphics will affect not only observable behaviors but also cognitive processes.

Cognitive style research has discovered that a person's cognitive style affects perception and use of information and may be more critical in determining decision-making approaches than the problem itself.

Cognitive style is of interest to educators because it is an expression of personality, and has a broad influence on many aspects of personality and behaviors: perception, memory, problem solving, and even social behaviors and self-concepts. Simply, it is the how of thinking which provides an important insight into the kind of personality an individual has.

In analyzing cognitive styles, researchers have identified and studied many dimensions. What most dimensions have in common is distinguishing between people who look at the world in a "lump" and those who perceive it more selectively. Of the

19 cognitive style dimensions identified, field dependence-independence is the most extensively researched.

Field independence, characterized by people perceiving objects as discrete from their background and more analytical in their approach to the environment, was measured by a score above the mean on Witkin's Group Embedded Figures Test (GEFT). Field dependence, characterized by people who tend to embed an object in its surroundings and use an over-all approach to perceive the ironment, was measured by a score below the mean on the GEFT.

The Group Embedded Figures Test (GEFT) used in this study requires the subject to locate a simple figure in a complex design which is so organized as to conceal the simple figure. For some persons, the simple figure almost "pops out" of the complex design. Their perception is field independence. For others, the organization of the field as a whole dictates the manner in which its parts are experienced, hence recognizing that the simple form takes longer. These people are field dependent. These field-dependent persons perform less well at solving problems which require isolating essential elements from the context in which they are presented and in using them in different contexts. They tend to adhere :o the organization of the field as given. The field-independent person, on the other hand, is likely to overcome or restructure the organization of the field, relying more on internal referents.

However, no empirical study of the role of cognitive style in the use of graphics by researchers has been located. For that matter, no research on learning and the use of decision-support systems other than studies that consider the problem of teaching people to use software were found. Because of the lack of empirical studies, the need for research into how a user comes to integrate decision aids, such as graphics, into the decision-making process is vital.

Decision Making

Although extensively researched, links between cognitive style and decision making have remained limited. Decision-making ability was either ranked the number one measure or considered a major dependent measure when examining the relationship between decision-making ability and graphic aids.

Decision making, as discussed in the study, refers to the following five-step process of decision making: (a) identifying the problem, (b) organizing data, (c) developing alternatives, (d) evaluating alternatives, and (e) implementing the choice. The variable was measured by each student's total number of correct answers given to the case problem questions.

Graphic Aids

Fundamental questions about the usefulness of graphics as a management decision tool have not been thoroughly addressed. Yet, the availability of graphics software and its capabilities in presenting graphic-related data is praised, leading potential users to believe that the graphic aid format makes a difference in how information is understood.

Graphic aids, as discussed in the study, is an "umbrella" term referring to four formats in which numerical data were presented in this study. The formats are as follows: narrative, tables, line graphs, and bar graphs.

Methodology

The problem was studied by applying an *ex-post facto* research design. The study consisted of one independent variable, cognitive style, that was an *ex-post facto* variable because it had already occurred in each subject, i.e., could not be manipulated or assigned. The other independent variable, graphic aids, was manipulated.

Based on Kerlinger's parameters, the design that best suggests the investigative approach that meets the elements of this study was the factorial design because, when treatments contain two or more factors with two or more levels, the design that results is called a factorial arrangement. Each of the independent variables in this study had different levels: graphic aids incorporated four levels (narrative, tables, line graphs, and bar graphs) and cognitive style was identified with two levels (field independence and field dependence).

The important statistical tests involved the treatment variable, graphic aids, for a main effect, as well as first-order interactions involving graphic aids. The null hypotheses in this study were tested at the .05 alpha level of significance.

Procedures

Data were collected through the administration of three tests given to 267 students enrolled in Business Report Writing classes at Northern Illinois University (NIU). NIU is a large, state-assisted co-educational, AACSB approved, institution of approximately 16,000 undergraduate students, offering programs in the basic disciplines, the arts, and the professions. NIU, the second largest single-campus state university in Illinois, offers more than 60 programs of study for undergraduate students.

Each student received and scores were ascertained from: (1) the Wonderlic Personnel Test, measuring general ability; (2) the Group Embedded Figures Test, measuring cognitive style dimensions of field independence and field dependence; and (3) a case problem, randomly assigned, in one of four formats, and designed to measure decision making.

The experiment investigated the relationship between graphic aids and the decision-making ability of the report reader, as modified by the cognitive style of the report reader. The subjects were given pretests to determine general ability and cognitive

style. The subjects answered questions concerning several problems in different graph formats to determine decision-making ability.

The case problem, facts, and questions were identical for all students. The data, although identical, were presented in four different formats: narrative, tables, bar graphs, and line graphs.

The resulting data were subjected to appropriate statistical analysis.

Findings and Conclusions

Based on the findings of the study, the following conclusions were made:

1. cognitive styles alone did not make a significant difference in decision-making ability, and

2. graphic aids alone did not make a significant difference in decision-making ability.

However, conclusions were also made that:

3. when considering graphic aids and cognitive style in conjunction with each other, (a) a significant difference in decision making was found, and (b) cognitive style was responsible for the significant difference.

The final conclusion was based on the finding that differences in cognitive style were not significant for narrative or tables, but cognitive style differences were significant for line and bar graphs. Field dependents scored significantly lower when making decisions from line or bar graphs.

Recommendations

The study resulted in a number of recommendations for individualizing the curriculum. The recommendations are factors that readers, writers, and instructors of report writing should consider.

Since cognitive style does make a significant difference when combined with graphic aids:

1. Demonstrate an awareness of different styles of learning and thinking since the processes of cognition form an effective basis for the individualization of instruction.

2. Assess the cognitive style of students in order to determine potential decision-making problems.

3. Provide special instructional materials to train students to perceive and process information in a way that is not in accord with their normal style.

4. Expose field dependents to more line and bar graphs, so that they can learn to use them more effectively, since field dependents do not make decisions as well as field independents when interpreting line and bar graphs,

5. Use adaptive mechanisms within the curriculum and in specific course structures which allow for meeting the variety of cognitive styles in students.

6. Vary modes of instruction, so that students with different cognitive styles will all have a chance to understand, put material in different formats so that subject can have a format that lends itself to that student's cognitive style.

7. Match learning approaches with appropriate tasks and specialties within the profession and structuring the curriculum to provide for this variety is needed. For example, ensuring that students have practice with the type of graphic aid that is prevalent in their profession.

Additional Research

Additional research is needed to develop methods to assist students to compensate or modify their individual cognitive style when interpreting graphic aids that are difficult for their particular cognitive style.

Applications of Research

The results of the study will be useful to both the worlds of education and business with the determination that cognitive style needs to be addressed when using graphic aids in decision making situations. Such information can be used to enhance the decision-making accuracy of students and employees. Since this study resulted in showing a particular cognitive style to be more effective in decision-making accuracy, in conjunction with graphics, education and business will know which people will have trouble with graphic. Now the most appropriate graphic aid can be taught in classrooms and used in businesses to foster more effective decision making.

The Effects of Computer-Assisted Instruction on Anxiety in First-Year Undergraduate Accounting Students

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Abstract

The study examined the effects of using computer-assisted instruction (CAI) on students' anxiety level toward first-year financial accounting courses. The results show that the use of CAI increases students' anxiety levels toward accounting. In addition, the following variables are associated with increases in anxiety: low grades in beginning financial accounting, high grades in mathematics courses, low preference for studying accounting, and native languages other than English.

The data were analyzed with analysis of covariance using hierarchical multiple regression. The statistical analysis attempted to demonstrate a difference between the control and experimental groups on state anxiety after controlling for the effects of the students' initial anxiety scores, some variables measured by a demographic survey, and abstract reasoning ability.

Introduction

Accounting educators must be aware of and plan for individual differences among students to the extent possible within time and physical constraints. Calhoun (1980) addressed the issue of individual differences with the following observations:

> Each learner has his or her own preferred path for acquiring information. Factors such as noise, lighting, heating, time of day, motivation, persistence, classroom organizational arrangement, and perceptual strengths contribute to an individual's learning style.

In addition to the differences cited by Calhoun, students differ in their level of state anxiety toward the study of accounting. According to Spielberger (1983) state anxiety "refers to a palpable reaction or process taking place at a given time and level of intensity."

In an effort to improve students' performance in and attitude toward accounting coursework, the researcher conducted an informal verbal survey of approximately fifty current and former accounting students at Scripps College, California State Polytechnic University Pomona, and The Claremont Graduate School in the Fall, 1987 semester. Students were asked to respond to the following questions:

1. Do you feel nervous about studying accounting?
2. If so, why?

Many of the students' responses indicated that they came into the first accounting course with a great deal of state anxiety. In the exploratory stage of the study, the State-Trait Anxiety Inventory (Spielberger, 1983) was given to a sample of approximately seventy students from Scripps College and California State Polytechnic University Pomona. The mean state anxiety score for students in the sample was 41.0 (on a scale from 0 to 80 with higher scores indicating higher levels of state anxiety), approximately twenty percent above the median score of 34.0 for a normative sample of college students as measured by the State-Trait Anxiety Inventory (Spielberger, 1983). In the survey cited above, students mentioned the following as sources of anxiety prior to or upon enrolling in a first-year accounting course:

1. A perception that accounting involves extensive advanced mathematics.
2. Accounting is a completely new discipline for most undergraduate and graduate students.
3. The vocabulary of accounting is too difficult to master.
4. Accounting requires a great deal of time for study and class preparation.
5. Accounting is associated with negative prior experience.
6. Folklore from others about the difficulty of accounting.

Regardless of the source of a student's anxiety, performance in the course may be negatively impacted to some degree by a student's anxious feelings.

State Anxiety

The first mention of anxiety in the literature of psychology may be attributed to Freud, who described anxiety as the "fundamental phenomenon and the central problem of neurosis" (Freud, 1936). Since Freud's initial discussion, two types of anxiety have been identified in the literature: state anxiety and trait anxiety. Distinguishing between the two types, Spielberger (1983) states:

> State anxiety . . . refers to a palpable reaction or process taking place at a given time and level of intensity. Trait anxiety . . . refers to individual differences in reactions. Trait anxiety implies differences between people in the disposition to respond to stressful situations with varying amounts of state anxiety.

In other words, state anxiety is a transitory feeling of unpleasantness, while trait anxiety refers to an individual's characteristic tendency to become anxious (Spielberger, 1966).

The principal focus of this study was state anxiety as it relates to a first-year financial accounting course. Volumes of research have been conducted on the impact of anxiety on student performance in various disciplines. According to Heinrich and Spielberger (1982), the studies have centered on "the effects of student anxiety on course grades and grade-point averages. . .and the correlation between anxiety and standardized tests of scholastic achievement." Khan (1969) found a significant relationship between achievement anxiety and student performance in a variety of academic areas, including arithmetic computation and problem solving. Specifically, he noted that higher levels of achievement anxiety are associated with lower levels of arithmetic computation ($n = 456$, $r = 0.509$, $p < .01$) and problem solving ability ($n = 456$, $r = 0.521$, $p < .01$). And, research involving the relationship between stress, anxiety, task difficulty, and performance on complex learning tasks has demonstrated similar results.

Heinrich and Spielberger (1982) endeavored to develop broad conclusions about the relationship between stress, anxiety, task difficulty, and performance on complex learning tasks. They defined complex learning tasks using three concepts proposed by Gagne and Briggs (1979): concept learning, rule learning, and problem solving. Heinrich and Spielberger's review encompassed five studies of college students conducted from 1957 to 1973 by the following researchers: Dunn (1968), Grant and Patel (1957), Romanow (1958), Etaugh and Graffam (1973), and O'Neill (1972). Based on their review, Heinrich and Spielberger drew the following conclusions:

1. Psychological stress generally results in performance decrements, but some stress may be required to motivate people to perform at an optimal level.

2. Psychological stress evokes higher levels of state anxiety in persons who are high in trait anxiety than in [persons low in trait anxiety].

3. *High levels of state anxiety . . . typically result in performance decrements on difficult learning tasks.* (emphasis added)

4. Psychological stress tends to facilitate the performance of persons who are high in [state anxiety] on easy learning tasks, but this is often difficult to demonstrate because of ceiling effects.

Thus, complete elimination of anxiety is not ideal, but the reduction of state anxiety should improve performance on complex accounting tasks, since accounting tasks involve considerable concept learning and problem solving skills.

Computer-Based Instruction and State Anxiety

Because of high state-anxiety levels, most students are willing to exploit every opportunity available to them to enhance their performance in the course. Currently, the following supplemental resources are available to improve students' performance in most accounting courses across universities: study guides which accompany the course textbook, student tutors, and conferences with the instructor during office hours.

Computer-based instruction could be added to the preceding list as an additional tool available to students. The use of computer-based instruction would free students from frequent trips to the campus to meet with instructors and/or tutors. In addition, incorporating computer-based exercises and problems as a tutorial aid would afford students additional practice in using the concepts and techniques of the course. Instantaneous feedback could be obtained by learners, instead of waiting to confirm the accuracy of a given solution with the instructor. Software designed to reduce students' anxiety toward accounting would need to be simplistic (e.g., a tutorial package). By utilizing a package with simple, non-threatening instructions and feedback, any potential anxiety caused by the use of the computer could be minimized.

Although his conclusions are stated somewhat tentatively, a study by Thomas (1985) reinforces the idea that computer-based instruction can help reduce state anxiety. As a result of his study of the effect of computer tutorial lessons on students in first-year accounting courses, Thomas concluded that students using computer tutorial lessons demonstrate higher overall class averages and less attrition than students without computer tutorial

lessons. In addition, Abraham, Loughrey, and Whalen (1987) discovered that using a computerized practice set improves students' attitudes toward accounting.

Research Question

Of all the individual differences that distinguish accounting students (e.g., motivation, achievement variables, ethnic backgrounds, and attitudinal factors), anxiety level is one of the most important. The preceding discussion, then, leads to the statement of the research question for this study: Can computer-based instruction be employed to reduce state anxiety toward accounting in learners who experience such anxiety? More specifically, the research question could be stated in the form of the following hypothesis: For learners in first-year undergraduate accounting courses, students who utilize tutorial computer-based instruction will have a lower state anxiety level toward accounting than learners who do not.

Tutorial Computer-Based Instruction

The experimental treatment used in this study was a tutorial software package. In this case, the software employed was an enhancement of a basic drill-and-practice software package which allows learners to proceed through a fixed set of material at their own optimal rate (see Asman, Cowen, and Mandell, 1986). Tutorial packages will typically present information, then ask the student questions based on the information. If the student gives a correct response to the question, the program moves on to the next topic. If the student responds incorrectly, the program will give some type of feedback, and (in many packages) allow the student to re-answer the question. The goal of drill-and-practice tutorial software is "to optimize the practice process by making practice more interesting, self-motivating, and efficient" (Salisbury, 1988).

Drill-and-practice software, including tutorial drill-and-practice packages, usually includes the following features (Salisbury, 1988):

1. Incorporating . . . procedures such as systematic review, spaced review, and informative feedback
2. Making practice more interesting . . . through competition, use of graphics, reinforcement, and variations in presentation
3. Easy updating of material or representation of equipment that may change rapidly
4. Providing sufficient practice to assure that all students automatize important subskills

The chief criticisms of drill-and-practice software have been its lack of full exploitation of the capabilities of the computer and its tendency to bore students because of its repetitive nature. Presenting facts to students and asking them questions based on the presentation is an instructional technique that, while sound, could as easily be accomplished with other instructional media. Therefore, Salisbury (1988) has suggested a variety of ways to incorporate drill-and-practice software into the instructional process in a way that takes advantage of many of the unique characteristics of the computer-based environment. He recommends the use of two or more "pools" of questions which can be presented in such a way as to ensure that students both review previously presented material and learn new material. In addition, he proposes the idea of "intelligent drills," designed to interact with the learner as a human instructor would, "constantly adapting future instructional presentations based on a continuous process of collecting and analyzing student performance data."

As indicated above, Thomas (1985) conducted a study on the effects of computer tutorial lessons on skills and attrition of first-year accounting students. Using four experimental groups and two control groups, he exposed the experimental groups to ten computerized tutorial lessons as supplements to regular classroom instruction; the control groups received traditional instruction only. The dependent measure for the study was each student's score on a standardized accounting test given to both groups at the conclusion of the experiment. Thomas reached the following conclusions as a result of the study:

1. Computer tutorial lessons may help students develop competence in accounting concepts and skills.
2. Students with higher academic ability benefit more from computer tutorial lessons than students with lower academic ability.
3. Students using computer tutorial lessons demonstrate higher overall class averages and less attrition than students without computer tutorial lessons.
4. Other factors beyond the control of the instructor affect performance in accounting courses.

Overall, Thomas' conclusions are stated somewhat tentatively; they do not provide strong, conclusive evidence that computer-enhanced instruction *alone* significantly improves student performance in accounting courses. The primary weakness of Thomas' study was his failure to control for various confounding factors, including the between-group variance associated with course meeting time. He expressed the view that "evening students tend to do better in Accounting I than day students," but nevertheless consistently assigned day classes to the experimental condition and evening classes to the control condition.

State-Trait Anxiety Inventory

Anxiety levels in this study were measured with the State-Trait Anxiety Inventory. While the State-Trait Anxiety Inventory (STAI) is designed to measure *both* state anxiety and trait anxiety, this study was concerned with state anxiety toward

accounting exclusively (participants were instructed to respond to the items in terms of their feelings about studying accounting). In the words of Spielberger (1983), designer of the STAI,

> The essential qualities evaluated by the STAI S-Anxiety scale are feelings of apprehension, tension, nervousness, and worry. In addition to assessing how people feel "right now," the STAI S-Anxiety scale may also be used to evaluate how they felt at a particular time in the recent past and how they anticipate they will feel either in a specific situation that is likely to be encountered in the future or in a variety of hypothetical situations. Scores on the S-Anxiety scale increase in response to . . . psychological stress. The scale has been used extensively to assess the level of S-Anxiety induced by . . . unavoidable real-life stressors such as . . . important school tests.

In this experiment, the STAI was administered the first day of class to measure students' anxiety level toward the study of accounting.

The S-Anxiety portion of the STAI consists of twenty statements regarding the subject's feelings at the time of administration. (The full test cannot be included in this paper because of copyright restrictions.) The statements are worded in such a way that ten items measure the *presence* of anxiety, while the other ten items measure the *absence* of anxiety. "Anxiety-present items" include such statements as "I am tense. I feel strained." Examples of "anxiety-absent items" include: "I feel calm. I feel secure." For each item, respondents are asked to indicate the intensity of the indicated feeling on a four-item Likert scale: not at all; somewhat; moderately so; very much so.

Spielberger (1983) designed the STAI specifically for use with "high school and college students and adults." The instrument is easily self-administered in group settings or individually. No time limits are set for the completion of the inventory, although most college students require about six minutes to complete the S-Anxiety scale alone.

As mentioned previously, ten of the items in the S-Anxiety scale of the STAI measure the presence of anxiety, while the remaining ten measure the absence of anxiety. Respondents indicate the intensity of the feeling indicated by each item on a four-point scale. Anxiety-present items in the instrument are scored as follows:

RESPONSE	VALUE
very much so	4
moderately so	3
somewhat	2
not at all	1

Reverse weightings are given for the anxiety-absent items (i.e., "not at all" is assigned a value of "4", etc.). After all twenty items are scored, the corresponding values are added together to arrive at the subject's total S-Anxiety score. Based on the preceding scoring scheme, then, scores may range from a minimum of twenty to a maximum of eighty, with higher scores representing higher levels of state anxiety.

Because state anxiety is a temporary feeling evoked by a particular set of environmental stimuli, "measures of internal consistency such as [Cronbach's] alpha coefficient provide a more meaningful index of reliability of S-Anxiety scales than test-retest correlations" (Spielberger, 1983). In a sample of 296 male and 481 female college students, Spielberger (1983) reported an alpha value of .91 for males and .93 for females, with means and standard deviations of 36.47 and 10.02 for males and 38.76 and 11.95 for females.

In addition to the high reliability indicated by Cronbach's alpha, item-remainder correlations for the S-Anxiety scale were high for the same sample of college students. (Item-remainder correlations refer to the correlation of the response of an individual item on the STAI with the responses on the remainder of the items on the same test.) As indicated by Spielberger's results (1983),

> The median S-Anxiety item-remainder correlation was . . . .59 for college students. The item-remainder correlations were .50 or higher for more than half of the items. . . and nineteen of the twenty S-Anxiety items had item-remainder correlations of .30 or above.

Thus, the STAI demonstrates substantial internal consistency.

Spielberger conducted extensive tests to determine the construct validity of the STAI. He reported the following results as evidence of the instrument's validity (1983):

1. The scores of military recruits, tested shortly after they began highly stressful training programs, were much higher than those of college and high school students of about the same age who were tested under relatively nonstressful conditions.

2. S-Anxiety scores of college students were significantly higher under examination conditions, and significantly lower after relaxation training, than when they were tested in a regular class period.

Based on Spielberger's analysis, then, the S-Anxiety scale of the STAI is a valid measure of state anxiety.

Statistical Methodology

The study was conducted using a pretest-posttest control group design. The experiment was conducted in two sections of introductory financial accounting over during Fall, 1989 and Spring, 1990 at California State Polytechnic University Pomona. Each quarter, one section was randomly assigned to the experimental condition, while the other section served as a control group. At the start of each quarter, each student in both the

experimental and the control groups completed a demographic survey, the Paragraph Completion Test (a measure of abstract reasoning ability), and the State-Trait Anxiety Inventory (STAI).

During the course of each quarter, the experimental group was required to use a tutorial computer-based instructional package as a supplement to regular classroom instruction. The control group utilized similar non-computer-based instruction.

At the conclusion of each quarter, the State-Trait Anxiety Inventory was administered a second time to provide a dependent measure for the statistical analysis. Controlling for other variables, the anxiety score was analyzed for significant differences between the control and the experimental groups, leading to retention or rejection of the null hypothesis of no difference between the groups.

The data were analyzed with analysis of covariance using hierarchical multiple regression. Basically, the statistical analysis attempted to demonstrate a difference between the control and experimental groups on state anxiety after controlling for the effects of the students' initial anxiety scores, some variables measured by a demographic survey, and abstract reasoning ability. Within the regression model, independent variables were entered in the following order: initial STAI score, demographic variables, abstract reasoning ability as measured by the Paragraph Completion Test, and group membership. The F-ratio provided by SPSS-X was used to test the simple correlation, change in R-square added, and final beta for each independent variable for significance. Since the independent variables were entered hierarchically, the effect of being in the control or experimental group (R-square added for the last variable) was *beyond* the effects of all other independent variables. Within each regression equation, a probability of less than .05 for the F-ratio associated with the change in R-square added would have led to rejection of the null hypothesis of no significant difference between the groups in anxiety level.

Regression Results

Three values will be reported for each independent variable: simple Pearson r, R-square added, and the final beta. Simple Pearson r indicates the strength of the linear relationship of the predictor with the criterion, ignoring all other variables. R-square added points out the strength of the contribution of the variable at the point of entry, with the effects of all prior variables removed. And, the final beta shows whether the variable makes a unique contribution above and beyond all of the other variables in the equation--order of entry is irrelevant.

Relationships between hypothesized predictor variables and state anxiety level toward studying accounting after using tutorial CAI are presented in Table 1. The information in Table 1 may be interpreted as follows: Higher initial anxiety toward accounting is associated with higher final anxiety toward accounting. Almost 1/3 of the variance (31%) in final anxiety toward accounting is explained by knowing the student's initial anxiety level. For students who had completed Acc 224 (the first of a two-course sequence in financial accounting) at the time of the study, lower grades indicated greater increases in final anxiety toward accounting than higher grades; this result follows from the interpretation of the final beta. In addition, the R-square added for grade in Acc 224 shows that about 8% of the variance in final anxiety is explained by knowing a student's grade in Acc 224, after controlling for the influence of all preceding predictor variables. Students with *higher* grades in math courses showed *greater* increases in final anxiety toward accounting than students with lower grades in math courses, as indicated by the final beta for grade in the last math course completed. Considering the effects of all preceding predictor variables, grade in a math course explains 2% of the variance in final anxiety level toward accounting.

And, finally, usage of tutorial CAI is a significant predictor of increase in anxiety toward accounting, even after removing the effects of all preceding independent variables. The R-square added by usage of CAI indicates that about 3% of the variance in anxiety can be accounted for by knowing whether or not a student was exposed to tutorial CAI. Thus, sufficient evidence exists to reject the null hypothesis of no difference in anxiety when students use tutorial software. However, contrary to the research hypothesis, the positive beta for exposure to CAI at the point of entry (0.18) demonstrates that use of the computer (the experimental condition) is associated with higher anxiety toward studying accounting.

Table 1
Regression Results (n = 103)
Dependent Variable: State Anxiety Toward Accounting

Independent variable	r	R-square added	Final beta
Initial anxiety toward accounting	.56***	.31***	.40***
Initial preference for accounting	-.17*	.00	.03
Sex (1 = male; 2 = female)	.10	.01	.03
Age	-.11	.01	-.09
Number of times registered for Acc 224	.10	.00	-.07
Presence/absence of grade for previous Acc 224 registration	.09	.00	.22
Grade for previous Acc 224 registration	-.46***	.08***	-.31***
Number of math courses completed	-.16	.00	-.13
Presence/absence of grade for math course	.09	.00	-.08
Grade in last math course completed	.15	.02*	.17*
Grade point average	.03	.00	-.01
Quantitativeness of major (0 = non-quantitative; 1 = quantitative)	-.05	.00	-.04
English-speaking ability (1 = native; 2 = non-native)	.25**	.02	.17
Abstract thinking ability	-.13	.00	-.24
Usage of CAI (1 = no; 2 = yes)	.17*	.03*	-.30

(* $p < .05$; ** $p < .01$; *** $p < .001$)

Conclusions

Student grades are important in the prediction of state anxiety levels concerning accounting. As noted in the results above, lower grades in beginning financial accounting are associated with higher final anxiety toward accounting. This result suggests that students who have not grasped the fundamental aspects of accounting are more anxious than students with a superior understanding of the fundamentals. Since accounting is a cumulative discipline (i.e., new material builds upon material previously presented), comprehension of the basics is crucial. Since the grade in beginning financial accounting was determined before the experiment began, one may infer that lower grades in beginning financial accounting cause increased student state anxiety toward accounting.

In contrast to the relationship between accounting grades and state anxiety level, students with higher grades in math courses have higher final anxiety in accounting than students with lower grades in math courses. This observation may reflect a more general attitude on the part of students who are more academically successful than their peers. For example, students who earn high grades in math courses may be more anxious in general about their grades than students who earn relatively lower grades in math courses. And, this heightened anxiety may serve as a motivator for greater effort in studying. Again, since each student's grade in the last math course completed was given prior to inception of the study, readers may conclude that higher grades in math courses cause increases in student anxiety toward accounting.

McClelland's (1966) classic work on the human need to achieve could shed more light on this conclusion. According to him, some individuals

> habitually spend their time thinking about doing things better. . . The evidence suggests it is not because they are born that way, but because of special training they get in the home from parents who set moderately high achievement goals but who are warm, encouraging and nonauthoritarian in helping their children reach these goals.

On the other hand, higher grades in math courses could cause increased state anxiety toward studying accounting because students come to believe that math skills are unimportant in learning accounting (after previously believing math skills are important). Students with higher grades in math courses should be studied in greater depth (perhaps with survey and/or interview techniques) to discover the role anxiety plays in expended effort and achieved results in the academic study of accounting.

Finally, and perhaps most significantly in terms of the objectives of the study, students using tutorial computer-assisted instruction have higher final anxiety toward accounting than students not using computer-assisted instruction. One may conclude from this result that the computer, rather than helping students master the concepts and procedures of accounting and thereby reducing their anxiety toward accounting, represents an anxiety-provoking stimulus at a time when students would rather concentrate their efforts on learning accounting via manual methods. Use of the computer as a study aid may help reduce anxiety if computerized tools and applications were made a formal part of the examination/evaluation process in beginning accounting courses. For example, beginning accounting students could be required to complete certain portions of examinations using computer software such as spreadsheets, drill-and-practice programs, and/or general ledger packages. Knowing that they would be expected to develop competence with the computer could motivate students to use the computer as a study aid, thereby reducing their anxiety. While a wealth of appropriate software for implementing this suggestion exists, the primary constraints on its practical application are the availability of the necessary hardware and the willingness of accounting educators to incorporate computer-based testing techniques in their courses. In addition, the increase in anxiety due to use of the computer may be created by lack of familiarity with the computer in general; that is, the source of the effect could be the students' anxiety over mastering an additional domain (computer usage) while trying to master accounting simultaneously. To combat unfamiliarity with the computer as an additional source of anxiety, accounting curriculum designers should consider requiring an introductory computer course as a prerequisite to financial accounting.

Recommendations for Further Research

In addition to replications of this study and the suggestions noted in the preceding section, further research in this area could focus on the following questions:

1. Why do students enter accounting courses with substantial state anxiety? What level of state anxiety is optimal for learning the fundamentals of accounting?

2. What role should computers and computer-assisted instruction occupy in accounting education? Would the impact of CAI on anxiety (or other dependent variables) be different if utilized later in the accounting curriculum (i.e., in the intermediate accounting sequence, the cost accounting sequence, and/or others)?

3. To what extent is continued exposure to a particular pedagogical technique more effective than limited exposure? That is, if CAI or some other instructional method were used consistently across the accounting curriculum, would its impact on anxiety, motivation, or other dependent variables be different?

Based on the results of this research, accounting educators should re-assess the benefits and costs of using computer-assisted instruction in first-year accounting courses. In addition, the results call for a renewed emphasis on helping students grasp the fundamental aspects of accounting. By ferreting out the contribution of computers to the education of accountants and other

business professionals, educators will improve both the accounting profession and other management disciplines.

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Employer Assessments of Strengths and Weaknesses of Recent Business Graduates

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Abstract

This study examined employer opinions of strengths and weaknesses of business graduates hired during the past three years. A total of 176 personnel officers from a national sample responded to the survey. In contrast to the literature, the respondents expressed a high degree of overall satisfaction with recent business hires. Those areas where dissatisfaction existed were rank ordered as follows (backslashes indicate ties): realistic advancement expectations, realistic salary expectations, desktop publishing background, effective writing skills, computer graphics background, maturity and experience necessary for major responsibility, assessment of forces affecting the company/knowledge of the effort required to sell ideas/acceptance of routine job aspects/ability to negotiate and resolve conflicts, database management, willingness to relocate, secure enough to take risks, and company loyalty.

Introduction

Societal factors during the 1990s appear to be demanding deep structural changes for the continued survival of American government, business, and educational institutions. The American way of life is in upheaval from global competition, dramatically shifting demographics, domestic difficulties, and economic woes. The focus of this study is on the education of American students for entry into the business world. Are businesses satisfied with the products of colleges and schools of business? Which areas are most in need of improvement?

Review of Related Literature

Schools and colleges of business have been targets of criticism for many years. They are often charged with doing unrealistic, purely academic exercises and solving "yesterday's problems" (Behrman & Levin, 1984; Bickerstaffe, 1981; Buckley, Peach, & Weitzel, 1989; Gordon & Howell, 1959; Livingstone, 1972; Mandt, 1982; Pierson, 1959; Porter & McKibbin, 1988). These complaints have led researchers to rank order business program graduates' inadequacies.

Business curriculum. Mandt (1982) took a broad swipe at business education:

> To be blunt, the typical business school curriculum fails to prepare students properly. It fills the student's head with facts . . . and specialized theory . . . But none of these is integrated into any kind of cohesive system. (p. 49)

In the field of management the emphasis is often on developing problem-solving and decision-making skills leaving little time for developing abilities to uncover problems, design plans to achieve goals, and implement those plans. Buckley, et al. (1989) state:

> Preoccupation with problem solving and decision making in formal management education programs overdevelops an individual's analytical ability but leaves the ability to take action and get things done underdeveloped. (p. 103).

Business educators should have close ties to business to clearly focus curricula on the intensely competitive global marketplace.

Communication skills. Curtis, Winsor, and Stephens (1989) surveyed 1,000 personnel managers listed as members of The American Society of Personnel Administrators. The five most important factors that help graduating college students obtain employment were rank ordered as follows: oral communication skills, listening ability, enthusiasm, written communication skills, and technical competence. In addition, the five most important factors for successful job performance were rank ordered as follows: interpersonal/human relations skills, oral communication skills, written communication skills, persistence/ determination, and enthusiasm. Clearly, communication abilities dominate these lists of essential skills. Bickerstaffe (1981) explained that management educators know that management is about relating to others; the problem is that few efforts are made to teach critical interpersonal skills (p. 22). Curtis, et al. (1989) suggested that " . . . the more attractive job applicants

and more successful profiles of those advancing through the ranks are those who emphasize communication and business courses in their college curriculum" (p. 13). Communication skills, always considered important, are becoming increasingly critical as business evolves to a service-oriented economy (Buckley, et al. 1989).

Business research. Business schools and colleges are strongly criticized for faculty research projects that are considered out of touch with reality, narrow, and highly esoteric (Bickerstaffe, 1981; Ryan, 1977). New professors are pressured to publish if they want to attain rank and promotions; research is often focused on projects that are easily implemented and readily publishable rather than essential. Business educational systems and the journals that have emerged perpetuate and support this kind of research. Too often credibility is attached to research published in refereed journals rather than research of substance. This is a self-perpetuating dilemma for academic faculty and institutions.

Criticism of graduates. Webber (1976) described problems with graduates as follows:

> Frustration and dissatisfaction in young graduates' early careers is [sic] widespread because of several factors: their job expectations are unrealistic; they find it difficult to change from school's short-range perspectives to work's long-range view; many employers assign them boring tasks that don't challenge them; and they may begin under an incompetent first supervisor. As a result, turnover from first positions is substantial (p. 29).

Today's highly competitive, rapidly changing environments call for employees who: (a) understand that learning is a lifelong process, (b) can cope with swiftly changing technology, (c) are risk takers who can solve problems in unstructured and uncharted areas, (d) have broad communication skills including highly honed interpersonal skills including conflict resolution, and (e) have the ability to humanize the corporation (Buckley, et al. 1989).

Statement of the Problem

This study was undertaken to determine employer assessments of strengths and weaknesses of business graduates hired during the past three years. The literature review served to pinpoint motivation, attitudes, knowledge, skills, and abilities of business graduates. In addition, abilities concerning specific computer applications were added for timeliness along with concerns about the changing demographic makeup of the work force and forces affecting the work environment.

Purpose of the Study

The primary purpose of this study was to provide information that can be used by educators when evaluating and revising existing curricula in colleges of business to reflect needs identified by the current survey assessment. Additionally, this information can be used to assist educators and professional career counselors in advising students to select pertinent coursework, summer work experiences that can enhance long-term career development, beneficial extracurricular activities, and program options such as internships.

Procedures

This section includes a discussion of the development of the research instrument, the selection of the sample, and the procedures used to collect the data.

The Research Instrument

The survey focused on the following sections: (a) demographic data about the specific respondents and their businesses; (b) motivation and attitudes of recent business graduates; (c) knowledge, skills, and abilities of recent business graduates; (d) specific computer software training of recent business graduates; and (e) open-ended items which asked personnel officers to give advice to professors and students, to list the skills they consider most lacking in graduates, and finally to list what makes interviewees and workers stand out from their subordinates. Ratings were recorded on five-item Likert-type rating scales (strongly agree, agree, disagree, strongly disagree, and don't know). In sections b-d, respondents were asked, based on their experience and feedback, to rate statements such as, "The recent business graduates hired at your site during the last three years are punctual."

The researchers developed this instrument after a literature review and analysis of related studies. The survey was critiqued by college of business colleagues, a career counselor, and MBA students involved in the research. Local employers were used to pilot test the revised survey. Suggested changes were incorporated in the final version.

Sampling and Questionnaire Administration Procedures

A spring 1990 national listing of employers (personnel officers) who hire large numbers of college graduates and commonly recruit on college campuses was used to select a random sample of 666. Since the response rate was expected to be low, the sample size was doubled (Wunsch, 1986). The entire sample received the first mailing, which included a cover letter, business-reply envelope, and the survey instrument. Reminder postcards were mailed to nonrespondents several weeks later. The respondents from these mailings comprised the first or mail group of 95, which was collected by mail. The second group, the phone group, of 81 responded only after receiving one or more personal phone calls. There were no significant differences between the means on the ratings scales for the mail group and the phone group; therefore, the two groups were combined.

Letters and phone calls from the sample population indicated 98 employers could not respond because they had not hired business

graduates recently. This number was subtracted from the original sample of 666 yielding 568. A response rate of 30.98% was obtained (176/568). Because business surveys have extremely low collection rates, response rates in the 20-40% range are considered acceptable (Kanuk & Berenson, 1975; Linsky, 1975; Tull & Hawkins, 1990). It is impossible to know how many nonrespondents simply did not have the data available to answer the survey questions; letters from and conversations with many nonrespondents indicated some employers were planning to implement procedures to collect similar information in the future to improve hiring procedures by utilizing performance feedback. Some respondents were convinced to collect the information by checking with supervisors of new hires, a time-consuming project. Many personnel officers wrote or explained when called that they had not hired anyone within the last three years because of downsizing. In some cases they did not hire business students but were hiring in other job areas and, therefore, could not respond.

Samples of Respondents and Businesses

The companies surveyed were located in 34 states and the District of Columbia. Large corporations with sites in more than one state comprised 18% of the businesses represented. The industries representing 10% or more of the respondents are listed in rank order: manufacturing (32%); finance, insurance, and real estate (22%); public administration (21%); transportation and public utilities (13%); and services (12%). Most of the respondents had large numbers of employees at their locations.

The number of business student hires at respondent locations during the last three years is shown in Table 1.

Table 1
Percentages of Respondents by Number of Hires in the Past Three Years (n=176)

Number of Hires	Percentages of Respondents
1-5	15.34
6-10	20.45
11-15	10.23
16-20	8.52
21-25	6.25
26-30	3.98
31-35	3.98
36-40	1.70
41-50	2.27
50+	24.43

Most of the respondents with more than 50 hires were concentrated in the 50-60 hire range; this group represents the category with the highest response rate.

Personnel officer demographics. The overwhelming majority of personnel officers (71) have held their current positions for four years or less with the largest number (23%) holding their positions for only one year. Four and one-half (4.4) years is the mean for current positions.

The length of time personnel officers worked for their current employers showed more variability with 41% having worked there one to four years and 70 % having worked there one to ten years. The mean length of service to the company was eight (7.9) years. The personnel positions represented in this study appear to lack longevity.

The demographic characteristics of the personnel officer respondents are shown in Table 2.

Table 2
Demographic Characteristics of Age and Gender (n=176)

	Number	Percentage
Gender		
Male	98	56
Female	77	44
Age		
20-30	38	22
31-40	75	43
41-50	43	25
51-60	19	11

Note: Some percentages do not sum to 100 because of rounding.

The personnel officers responding were 56% male and 44% female. The largest number of respondents were in the 31-40 (43%) age category with the next largest category being 41-50 (25%).

When personnel officers were asked whether they were aware of the American Assembly of Collegiate Schools of Business (AACSB), 45% said yes while 53% said no. When asked whether they preferred to hire graduates of AACSB institutions, 28% said yes, 48% said no, and 24% did not respond.

Results

The conclusions of this study are based on the assumption that the respondent population is representative of the total target population. While the study's response rate (30.98%) exceeds rates often reported by researchers in business (Kanuk & Berenson, 1975; Linsky, 1975; Tull & Hawkins, 1990), the response rate is low. Similar data from a second sample drawn from Minnesota produced parallel results. Nevertheless, nonrespondents' answers could have caused the findings to be substantially different.

Table 3 shows the mean rating for each question concerning motivation and attitudes; knowledge, skills, and abilities; and specific computer applications. For these scales, 4 = Strongly Agree and 1 = Strongly Disagree, so that higher means indicate a higher degree of satisfaction. For each scale, an overall satisfaction index was computed, which consists of the percent of respondents who either agreed or strongly agreed with the statement. Within each category of question, statements are ordered from high to low on the basis of this satisfaction index.

The satisfaction index and principal survey results are shown in Table 3.

Table 3
Survey Results

Question	Mean Satisfaction	SD	Percent Satisfied	n
Punctual	3.27	.47	99	168
Honest	3.23	.48	98	166
Grooming	3.18	.53	94	173
Ethical	3.17	.58	93	165
Dependable	3.15	.44	97	171
Work Hard	3.14	.52	94	171
Committed to lifelong education	3.13	.61	90	164
Pride in work quality	3.11	.54	93	172
Gets along with others	3.06	.55	91	172
Academically well trained	3.02	.45	92	172
Good work habits	3.02	.51	90	170
Good initiative	3.00	.49	90	171
Spreadsheet	3.00	.58	86	158
Work with diverse work force	2.95	.57	82	169
Good decision-making ability	2.91	.47	87	165
Concerned with productivity	2.90	.56	82	164
Good problem solving	2.88	.51	85	167
Works without excessive guidance	2.88	.57	81	168
Adapts to change	2.87	.49	85	170
Word processing	2.86	.64	77	155
Skilled in training & development	2.83	.49	84	147
Good leadership ability	2.80	.59	77	161
Applies theory to practice	2.80	.54	77	165
Creative thinking ability	2.80	.55	79	162
Speaks effectively	2.78	.58	77	163
Makes ethical decisions	2.76	.61	76	149
Loyal to company	2.73	.68	72	166
Database management	2.68	.68	69	145
Secure enough to take risks	2.67	.58	71	153
Willing to relocate	2.67	.71	70	149
Maturity/experience for major responsibility	2.62	.65	62	165
Sells ideas	2.61	.61	63	155
Assesses forces affecting company	2.60	.61	63	156
Accepts routine job aspects	2.59	.61	63	168
Negotiates to reduce & resolve conflicts	2.55	.61	63	143
Writes effectively	2.48	.71	57	163
Graphics	2.50	.70	61	133
Realistic starting salary expectations	2.44	.75	51	169
Realistic advancement expectations	2.25	.69	39	169
Desktop publishing	2.24	.76	52	127

Generally, there is a high degree of reported satisfaction. Of the 40 statements, only 5 had mean ratings below the midpoint of the scale (midpoint=2.5), indicating that respondents tended to disagree with those statements. Those five statements dealt with the ability to write effectively, realistic expectations regarding the pace of career advancement, realistic expectations about starting salaries, adequacy of background in desktop publishing, and adequacy of background in computer graphics. A majority of respondents (61%) disagreed with only one statement, the statement concerning realistic expectations about starting salaries. On the surface, at least, the high degree of satisfaction among respondents contrasts sharply with the alarm expressed in the literature over the preparation of business school graduates.

Respondents seemed highly satisfied (i.e., 90% agreeing or strongly agreeing) in fully 9 of the 17 areas surveyed in the area of motivation and attitudes: punctuality (99%), honesty (98%), dependability (97%), professional grooming (94%), willingness to work hard (94%), ethical behavior (93%), taking pride in quality (93%), good work habits (90%), and exhibiting initiative (90%). A substantial percentage (i.e., 25% or more), however, *disagreed* with statements about the following: hires' realism concerning the pace of advancement (61%), realism about salary (49%), maturity and experience necessary for major responsibility (38%), acceptance of routine job aspects (37%), willingness to relocate (30%), being secure enough to take risks (29%), and company loyalty (28%). As the questions became more specific, the level of satisfaction declined. Respondents more frequently agreed with statements about general characteristics, such as honesty and good work habits, than with more specific statements, such as realism about salary and willingness to relocate.

In the area of knowledge, skills, and abilities, there were only 3 of 18 areas in which at least 90% of the respondents agreed: well trained (92%), ability to get along well with others (91%), and well educated (90%). A substantial percentage (25% or more) *disagreed* with statements about understanding the effort required to sell their ideas (37%), ability to assess forces affecting the company (37%), the ability to negotiate and resolve conflicts (37%), and the ability to write effectively (43%). It seems curious that 91% agreed that hires had the ability to get along well with others, but 37% disagreed that they were able to negotiate and resolve conflicts well. Possibly, the hires are perceived to function well in normal interpersonal conflicts but not in more stressful ones calling for adept negotiation and conflict resolution.

Regarding the five specific computer applications, word processing, database management, spreadsheet, graphics, and desktop publishing, there were no areas in which more than 90% of the respondents agreed that hires had adequate backgrounds. A substantial percentage (again 25% or more) *disagreed* that hires had an adequate background in three of the five areas: desktop publishing (48%), graphics (39%), and database management (31%). There was considerable disagreement about the role of training regarding software applications in the undergraduate

business curriculum. Some viewed this training as too specifically vocational for the broad liberal and business education of today's undergraduate business majors. Others acknowledged the importance of such skills but expressed dismay at the prospect of integrating this training into the already crowded undergraduate curriculum.

In general, there was little association between questionnaire responses and the demographic characteristics surveyed: gender, age, tenure in the current position, and tenure with the company. This gives some assurance that satisfaction perceptions are not merely "in the eye of the beholder" but have some generality across various demographic groups of personnel officers.

Conclusions

The issues identified by this study could assist educators' efforts to improve existing curricula. Areas of dissatisfaction with current business education programs have been identified and are discussed below.

1. ***A high degree of overall satisfaction with recent business hires was reported.*** In contrast to the literature, the respondents in this study showed a high degree of general satisfaction with the graduates of business programs. Of the 40 statements, only 5 had mean ratings below the midpoint of the scale (midpoint = 2.5), indicating that respondents tended to disagree with those statements. These findings suggest an opportunity for faculty to receive positive reinforcement.

2. ***Improved rapport between business faculty and business personnel is needed.*** Improved collaborative efforts will be required to effectively implement the structural changes in businesses that should be addressed by business education programs. Recent literature, as well as current findings, has identified the need for improvement in terms of realistic expectations concerning advancement and salary, maturity and experience necessary for major responsibilities, assessment of forces affecting the company, knowledge of the effort required to sell ideas, acceptance of routine job aspects, willingness to relocate, secure enough to take risks, and company loyalty. Emerging societal forces make these collaborative efforts a critical component of organizational transformation.

3. ***Communications skills should be stressed.*** The literature stresses the importance of communication skills. Specific communication courses should continue to be offered. Additionally, communication skills should be taught, integrated, stressed, valued (allocation of points/percentage of grade) in all business courses. The areas of greatest dissatisfaction identified by the current study, effective writing skills and the ability to negotiate and resolve conflicts, should be addressed.

4. ***Computer software training should be stressed.*** Computers appear on nearly every business desk. Students need to be thoroughly trained in the popular, sophisticated, and current program versions that businesses actually use. Of the five computer areas surveyed, only word processing and spreadsheet applications backgrounds were deemed satisfactory. This study identified three specific areas of dissatisfaction that should be addressed in terms of computer training: desktop publishing, computer graphics, and database management.

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Establishing Electronic Keyboarding Speed and Accuracy Standards for Postsecondary Timed Writings

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Abstract

Business educators have used timed writings as a major component of instruction for decades. However, traditional speed and accuracy standards that do not allow error correction as part of the input process are not appropriate for today's technologically-oriented society.

Based on this study using over 700 timed writings, both beginning and advanced postsecondary students attained higher speeds when using microcomputers than when electronic typewriters were used. It is interesting to note that beginning postsecondary students when using microcomputers left more uncorrected errors than beginning postsecondary students who used electronic typewriters. However, advanced postsecondary students using microcomputers left fewer errors uncorrected than those postsecondary students using electronic typewriters.

Introduction

America is constantly immersed in societal and technological change. Organizations, including education, must adapt to the times, or they will stagnate and fail (Morano, 1977). The impact of change is of concern to educators especailly business educators--business educators must adapt their instructional methodology to meet the demands of a changing society by serving as an impetus for change. Business education probably has experienced more change than any other discipline due to technological advancements. For example, electronic equipment is replacing standard typewriters as the major tool used in typewriting/keyboarding courses. Business educators have used timed writings as a major component of keyboarding/typewriting instruction for decades. One measure guaged by timed writings is the speed and accuracy skill of a keyboardist. However, traditional speed and accuracy standards that do not allow error correction as part of the input process are not appropriate for today's technologically-oriented society.

Since the introduction of immediate error correction using electronic equipment where corrections can be made with one keystroke, the grading for keyboarding speed and accuracy at the postsecondary level has been, at best, a guesstimate. According to Webb (1990), error correction during timed writings has given high school students greater confidence and reduced anxiety about taking timed writings. Consequently, when allowed to make corrections, students become more aware of errors and are required to take responsibility to look for errors. Therefore, correct words-a-minute scores are a more reliable measure of speed and accuracy skill because students use keyboarding time to correct errors (West, 1983). Additionally, the threat of cheating by students is eliminated. Speed and accuracy standards that permitted error correction as part of the input process were established for secondary students using electronic equipment by Schmidt and White in 1989. Yet, there seems to be no general consensus on the best way to measure speed and accuracy skills for timed writings at the postsecondary level--speed and accuracy standards developed for the secondary level seem inappropriate.

Objectives/Purposes of the Research

This study, therefore, was undertaken to update standards for speed and accuracy on straight-copy timed writings using electronic keyboards with error correction allowed during the input process. The research questions answered in this study were:

1. How many words a minute do postsecondary keyboarding students achieve when allowed to correct errors during the input process on straight-copy timed writings?

2. How many errors a minute do postsecondary keyboarding students leave uncorrected when allowed to correct errors during the input process on straight-copy timed writings?

Methods/Procedures

Straight-copy timings of 5-minute duration were selected and administered to postsecondary keyboarding students. A major publisher of keyboarding textbooks permitted the selection and use of two comparable timed writings which contained appropriate syllabic intensity for the postsecondary level.

Students who completed the timed writings were enrolled in keyboarding classes taught by members of Beta Gamma, Gamma Gamma, and Gamma Psi chapters of Delta Pi Epsilon. Members of the three chapters who taught keyboarding at the postsecondary level were invited to participate if they were teaching keyboarding on microcomputers or electronic typewriters. Over 20 instructors agreed to participate and were sent straight-copy timed writings that were administered in October 1990 and April 1991. The first and second timed writings were duplicated on different colored paper to assist in preparing for data analysis. Over 350 students participated in the study, and each participant completed two straight-copy timed writings.

The timed writings were scored for gross words a minute (GWAM) and number of uncorrected errors by students. The instructor then checked the accuracy of the scoring; and their scoring was, in turn, randomly verified by the researchers. The completed timed writings were attached to the originals where students indicated the amount of keyboarding instruction they had completed--one-half year to two or more years--and the type of equipment used--microcomputers or electronic typewriters.

Data analysis included determining overall mean scores and scores on two important factors--words a minute and number of uncorrected errors--for both timed writings, for levels of instruction, and for kinds of equipment used. In addition, frequency distributions for number of timed writings completed at GWAM speeds and for number of uncorrected errors were prepared.

Data Collected/Findings

Over 20 instructors administered 5-minute timed writings to over 350 post- secondary students who completed over 700 timed writings using both microcomputers and electronic typewriters. Timed writings with 20 or more uncorrected errors or those where timed writings were not attached to the originals were not used. The distribution of timed writings analyzed by level of instruction and by type of equipment used follows in Table 1.

Table 1
Postsecondary Participants

Level	Microcomputers	Electronic Typewriters	Total
Beginning	211	194	405
Advanced	242	87	329
	453	281	734

Descriptive statistics for the GWAM and number of errors for the two instructional levels combined are reported in Table 2. The GWAM for timed writings completed by beginning postsecondary students on both types of equipment ranged from 32 to 36.6 words per minute with a mean of 34.5 words per minute. The GWAM for timed writings completed by advanced postsecondary students on both types of equipment ranged from 42.8 to 46.8 words per minute with a mean of 44.7 words per minute. The number of errors uncorrected by beginning postsecondary students using both types of equipment ranged from 2.7 to 3.7 with a mean of 3.3. The number of errors uncorrected by advanced postsecondary students using both types of equipment ranged from 3.0 to 3.8 with a mean of 3.4.

Table 2
Mean GWAM and Uncorrected Errors Scores

	GWAM			Errors	
Level	N	Mean	SD	Mean	SD
Beginning	405	34.5	11.8	3.3	3.0
Advanced	334	44.7	11.9	3.3	2.8

Information presented in Table 3 describes the GWAM performance and number of errors uncorrected for beginning and advanced postsecondary students by type of equipment.

Table 3
GWAM and Uncorrected Error Scores by Types of Equipment

Microcomputers

Level	N	GWAM	SD	ERRORS	SD
Beginning	211	35.7	11.9	3.6	3.2
Advanced	247	45.1	12.5	3.1	2.8

Electronic Typewriters

Level	N	GWAM	SD	ERRORS	SD
Beginning	194	33.3	11.6	2.9	2.7
Advanced	87	44.3	11.2	3.5	2.8

The GWAM for beginning postsecondary students using microcomputers ranged from 10 to 69 words per minute with a mean

of 35.7. The GWAM for advanced postsecondary students using microcomputers ranged from 15 to 100 words per minute with a mean of 45.1. The number of errors uncorrected for beginning postsecondary students using microcomputers ranged from 0 to 19 with a mean of 3.6. The number of errors uncorrected for advanced postsecondary students using microcomputers ranged from 0 to 15 with a mean of 3.1.

The GWAM for beginning postsecondary students using electronic typewriters ranged from 10 to 64 words per minute with a mean of 33.3. The GWAM for advanced postsecondary students using electronic typewriters ranged from 20 to 70 words per minute with a mean of 44.3. The number of errors uncorrected for beginning postsecondary students using electronic typewriters ranged from 0 to 18 with a mean of 2.9. The number of errors uncorrected for advanced postsecondary students using electronic typewriters ranged from 0 to 12 with a mean of 3.5.

Conclusions/Implications

Based on this study using over 700 timed writings, both beginning and advanced postsecondary students attained higher speeds when using microcomputers. It is interesting to note that beginning postsecondary students when using microcomputers left more uncorrected errors than beginning postsecondary students who used electronic typewriters. Yet, the opposite is true for advanced postsecondary students. Advanced postsecondary students left more uncorrected errors when electronic typewriters were used. Schmidt and Joyner (1990) suggested that the sensitivity of microcomputer keyboards may affect the number of uncorrected errors; however, the results of this study report conflicting information--advanced postsecondary students using microcomputers left fewer errors uncorrected than those students using electronic typewriters. Postsecondary instructors using electronic typewriters and/or microcomputers for timed writings should prudently use the results of this study as they plan, implement, and modify keyboarding instruction that allows error correction during the input process.

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Foreign Languages and International Business Correspondence: Perspectives from the Business Communities of Two English-Speaking Nations

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Abstract

The foreign-language related practices and perspectives involving international business correspondence were explored from the viewpoints of the two major English-speaking trading nations, the United States of America (U.S.A.) and the United Kingdom of Great Britain and Northern Ireland (U.K.). Findings include cross-cultural comparisons of outgoing and incoming international business correspondence, translation practices, foreign languages recommended for business purposes, importance of fluency in second and third languages for business purposes, percentages of employees who are fluent in second and third languages for business purposes, and ways in which employees obtained competency in second and third languages for business purposes.

Introduction

International business has risen in importance in recent years as the worldwide economic order has changed. Attention is increasingly being focused on the various dimensions of international business communication because it plays a vital role in the transaction of international business (Kilpatrick, 1984). Since English is widely regarded as the dominant language for international business purposes (Colback & Maconochie, 1989; Inman, 1985), native English speakers are in a quandary. Is there a real need to develop fluency for business purposes in one or more foreign languages? If so, what would be the foreign languages with the most utility for international business purposes, and how should the necessary fluency for business purposes be developed?

Although a number of individuals and groups purport to have answers to these and related questions, many of these sources are remotely connected--if at all--with international business and may be motivated by self-perpetuating considerations; consequently, their widely circulated viewpoints and advice may or may not reconcile with the foreign language and international business correspondence perspectives of major trend-setting businesses that engage in international business on a continuing basis.

To address this concern, an exploratory study was conducted from the perspectives of the international business communities of two major English-speaking trading nations. Among other things, the study sought to explore foreign language practices and perspectives involving international business correspondence from the viewpoints of major trend-setting American and British companies engaged in international business. With this additional information, it should be possible to offer sound advice to native English speakers regarding foreign languages for international business purposes.

Literature Review

A comprehensive literature search in both the U.S.A. and the U.K. revealed that English is widely regarded as the language of international business (Colback & Maconochie, 1989; Inman, 1985). This dominance is reaffirmed by the facts that about 80 percent of all of the information in the electronic retrieval systems in the world is stored in English and that about 70 percent of all of the mail in the world is written in English ("Global Diary," 1989).

Since the English language exists in a variety of forms, some have recommended the use of straightforward Standard English for business purposes while recognizing varying practices among well-educated persons in various English-speaking countries (Birkel, 1988; Haneda, 1976; McDowell, 1987; Treece, 1986). Others have pointed out the need to develop linguistically and culturally fluent international businesspersons (Kilpatrick, 1984; Kohut & Baxter, 1985; Paulsell, 1987; Victor, 1986, 1992; Zimpfer & Underwood, 1988). For example, respondents in one British study reported that 54 percent of the sampled British companies had lost trading opportunities with foreign businesses because the British companies did not have employees who could

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transact business in the appropriate foreign languages (Segal, 1987). Further, there is clear evidence of a direct link between export performance and foreign language proficiency (*The Single Market*, 1989).

While opinions differ regarding which specific foreign languages to teach to native English speakers for business purposes, support for business foreign language courses and programs is growing in both the U.S.A. and the U.K. (*Directory of Programmes*, 1990; Duran, 1988; Gould, 1986; Grosse, 1983, 1985; Rusterholz, 1987; Scott, 1991). The roles of language and cross-cultural training in U.S.-based multinational corporations have been investigated (Inman, 1985; Zimpfer & Underwood, 1988) but not in U.K.-based multinational corporations.

Cultural differences are responsible for most of the problems in international business communication (Kilpatrick, 1984). These differences impact various dimensions of business communication, including nonverbal aspects (Himstreet & Baty, 1987; Kameda, 1977; Victor, 1992; Waltman, 1984), oral aspects (Kohut & Baxter, 1985; Ramsey, Wright, & Brar, 1984; Neu, 1986), and written aspects (Javed, 1981; Kohut & Baxter, 1985; Treece, 1986; Victor, 1992). Cultural differences also affect the translation of business documents (Kilpatrick, 1984; Victor, 1992).

The international business letter-writing practices of U.S. companies were explored in the early 1980s (Kilpatrick, 1984), but no comparable study of U.K. companies was found, although a BETRO Trust report did indicate that 80 percent of the surveyed exporting companies in the U.K. seldom correspond in any language other than English (Lowe, 1982).

Methodology

A two-part questionnaire was developed based upon the information uncovered during the literature search. The first part of the questionnaire was designed to gather demographic information about the respondents and the companies they represent, and the second part was designed to gather information about business languages and related international business correspondence practices and perspectives. The research materials, consisting of a cover letter, a questionnaire, and a preaddressed, postage-paid return envelope, were mailed to each of the chief executive officers of the 100-largest American companies as listed in "The Forbes Sales 500" (1989) and to each of the managing directors of the 100-largest British companies as listed in *The Times 1000: Leading Companies in Britain and Overseas, 1988-1989 ed.* (Allen, 1989). Of all of the available American and British rankings of domestic-based companies, these two listings used the most similar bases for evaluating companies and consequently provided the most comparable rankings of companies. The 100-largest American and 100-largest British companies were selected for study because it was thought that their trend-setting practices and perspectives would reflect the current and near future states of American and British practices and perspectives regarding foreign languages and international business correspondence better than those of any other American and British companies. Further, these companies would represent the practices and perspectives of English-speaking countries involved in international business better than those from any other countries because they are the two dominant ones economically.

The research materials were addressed to the American chief executive officers and the British managing directors with instructions to route the three-page questionnaires and return envelopes to their respective employees who were most knowledgeable about the foreign language and international business correspondence practices and perspectives of their employing companies. Given the wide variety of organizational structures within the sampled companies, it was impossible to mail the research materials directly to potential respondents because it was impossible to identify their names and job titles in advance. Nevertheless, almost all of the respondents selected by the chief executive officers and managing directors had major upper-level managerial positions, which suggests that they were in positions where they could provide authoritative information on behalf of their employing companies. Two followup communications with replacement questionnaires and envelopes were mailed to the chief executive officers of nonresponding American companies and the managing directors of nonresponding British companies at approximately one-month intervals.

By the deadline for receiving questionnaires from the second followup effort, 54 of the 100 American companies and 42 of the 100 British companies had responded in some manner. Respondents from 35 of the American companies and 26 of the British companies provided significant amounts of usable data on their questionnaires. Although the usable response rate for the American companies was 35 percent and for the British companies was 26 percent, there is evidence that these respective response rates are typical when questionnaires are mailed to American businesses for completion (B. Davis, personal communication, July 3, 1991) and to British businesses for completion (M. P. Broussine, personal communication, January 16, 1990; *Management Challenges for the 1990s*, 1989).

A variety of factors may have influenced the usable response rates. What effect receiving the research materials indirectly rather than directly may have had on the willingness of recipients to respond is impossible to assess. Although access by outsiders to business-related information is often not a major concern of U.S. businesses, it frequently is a major concern of U.K. businesses, especially if the information relates to sensitive or potentially embarrassing matters (Scott, 1990). Since the questionnaire probed into such matters as business foreign language skills, training and development of employees, international business correspondence practices and perspectives, and international business perspectives, all of which historically have been perceived as having low value within the British business community (M. P. Broussine, personal communication, January 16, 1990), these culturally rooted factors may have diminished the

willingness of some potential British respondents to complete their questionnaires. Since international business historically has not been perceived as having high value within the American business community, it is possible that some potential American respondents may also have been deterred from responding by culturally rooted factors.

In terms of both demographic factors and response patterns on selected questionnaire items, no significant differences were found between the early and late American and British respondents. This suggests that had the American and British nonrespondents actually responded, they would have done so similarly to the respondents and that despite the nonresponse factor, the respondents appear to be representative of their respective populations.

Representatives of 19 American and 16 British companies were unable to complete their questionnaires. Among the reasons cited by these individuals for not completing their questionnaires and their respective frequencies were the following: a company policy prohibits the completion of questionnaires, 16 American representatives and 5 British representatives; the company is unable to provide the requested data because of decentralized management, corporate diversity, or time and cost constraints, 1 American representative and 7 British representatives; the company prefers not to respond for unspecified reasons, 2 American representatives; the company no longer exists as a separate entity because of merger or acquisition, 2 British representatives; and the company engages in minimal international business correspondence, 2 British representatives. These cited reasons are unrelated to the central focus of the survey (West, 1977).

Overall, the evidence suggests that the gathered data are as complete and as representative of major trend-setting American and British companies as can be expected given the unique characteristics of their respective business subcultures.

Demographics

The typical respondent from the 100-largest American companies was a male between 41 and 60 years old who had been employed between 21 and 25 years in his profession; he worked in the manufacturing industry for a company with 75,001-100,000 employees whose efforts generated annual revenue of between $1 billion and $5 billion derived from 90 percent domestic and 10 percent foreign sources. In contrast, the typical respondent from the 100-largest British companies was a male between 41 and 50 years old who had been employed between 16 and 20 years in his profession; he worked in the manufacturing industry for a company with fewer than 25,000 employees whose efforts generated annual revenue of between the equivalent of $1 billion and $5 billion derived from 60 percent domestic and 40 percent foreign sources. To the extent that the demographic characteristics of other American and British companies and their respective representatives are similar to demographic characteristics of the sampled American and British companies and their respective representatives, they are also representative of those American and British companies and their respective representatives.

Findings

Table 1 shows from both the American and British perspectives the mean percentages of total outgoing international business correspondence written in the indicated languages.

Table 1
Languages Used in Outgoing International Business Correspondence

American perspective		British perspective
Mean percentage of total outgoing correspondence written in the language	Language	Mean percentage of total outgoing correspondence written in the language
.00%	Arabic	.71%
.03%	Chinese	.94%
96.85%	English	90.05%
.77%	French	2.65%
.70%	German	1.59%
.10%	Italian	.82%
.23%	Japanese	.71%
.03%	Korean	.35%
.13%	Portuguese	.82%
.10%	Russian	.47%
.76%	Spanish	.71%
.30%	Other	.18%

Note. From the American perspective Other includes Bahasa Indonesia and unspecified languages.

Note. From the British perspective Other includes Polish, Turkish, and Welsh.

Table 2 shows from both the American and British perspectives the mean percentages of total incoming international business correspondence written in the indicated languages.

Table 3 shows from both the American and British perspectives the translation practices that were used by the responding companies.

Table 4 shows from both the American and British perspectives the rank ordering of the foreign languages recommended to those preparing for business careers.

Table 5 shows from both the American and British perspectives the perceived importance of fluency for business purposes in a second language.

Table 6 shows from both the American and British perspectives the perceived importance of fluency for business purposes in a third language.

Table 2
Languages Used in Incoming International Business Correspondence

American perspective		British perspective
Mean percentage of total incoming correspondence written in the language	Language	Mean percentage of total incoming correspondence written in the language
.07%	Arabic	1.06%
.11%	Chinese	.56%
95.78%	English	86.00%
1.07%	French	3.38%
.89%	German	2.56%
.26%	Italian	.94%
.30%	Japanese	.81%
.15%	Korean	.38%
.19%	Portuguese	.81%
.15%	Russian	.75%
.81%	Spanish	2.50%
.22%	Other	.25%

Note. From the American perspective Other includes unspecified languages.

Note. From the British perspective Other includes Danish, Dutch, Hungarian, Norwegian, Polish, Swedish, Turkish, and Welsh.

Table 3
Translation Practices for Incoming International Business Correspondence

American perspective		British perspective
Percent	Translation practices	Percent
42.9%	The company usually has one of its own employees translate the correspondence unless it is highly complex or technical.	42.4%
5.7%	The company always has one of its own employees translate the correspondence.	15.4%
20.0%	The company usually depends on translators outside the company to translate the correspondence unless it is very simple and nontechnical.	11.5%
0.0%	The company always depends on translators outside the company to translate the correspondence.	7.7%
2.9%	The company uses some combination of the described translation practices.	19.2%
22.9%	The company never receives any international business correspondence written in other than the English language.	0.0%
5.6%	No response	3.8%

Table 7 shows from both the American and British perspectives the percentages of the responding companies with the indicated percentages of company employees who are fluent for business purposes in a second language.

Table 8 shows from both the American and British perspectives the percentages of responding companies with the indicated percentages of company employees who are fluent for business purposes in a third language.

Table 9 shows from both the American and British perspectives the primary means by which bilingual and multilingual employees obtained competency for business purposes in their second and third languages.

Discussion

While 19 out of 20 pieces of outgoing international business correspondence in the responding American companies are written in English, 18 out of 20 pieces of outgoing international business correspondence in the responding British companies are written in English. From the perspective of the responding American companies, the foreign languages used in outgoing international business correspondence are ranked in this decreasing order of frequency: (1) French, (2) Spanish, (3) German, (4) Other, (5) Japanese, (6) Portuguese, (7-8 tie) Italian and Russian, (9-10 tie) Chinese and Korean, and (11) Arabic. In contrast, Kilpatrick (1984) found a different ranking order, (1) Spanish, (2) French, (3) German, (4) Portuguese, and (5) Chinese, in part because the American businesses she studied corresponded much more frequently with Latin American countries than did the American businesses reported in this study. From the perspective of the responding British companies, the foreign languages used in outgoing international business correspondence are ranked in this decreasing order of frequency: (1) French, (2) German, (3) Chinese, (4-5 tie) Italian and Portuguese, (6-8 tie) Arabic, Japanese, and Spanish, (9) Russian, (10) Korean, and (11) Other. French and German are the foreign languages used most often in outgoing international business correspondence in both countries, and Korean is the foreign language used less frequently in outgoing international business correspondence in both countries.

While 19 out of 20 pieces of incoming international business correspondence in the responding American companies are written in English, 17 out of 20 pieces of incoming international business correspondence in the responding British companies are written in English. From the perspective of the responding American companies, the foreign languages used in incoming international business correspondence are ranked in this decreasing order of frequency: (1) French, (2) German, (3) Spanish, (4) Japanese, (5) Italian, (6) Other, (7) Portuguese,

Table 4
Foreign Languages Recommended for Those Preparing for Business Careers

American perspective		British perspective
Rank order	Language	Rank order
7	Arabic	9
5	Chinese	7
2-3	French	1
4	German	2
9-10	Italian	8
1	Japanese	4
9-10	Korean	10
8	Portuguese	5
6	Russian	6
2-3	Spanish	3

Table 5
Importance of Fluency in a Second Language for International Business Purposes

American perspective		British perspective
Percent	Importance	Percent
8.6%	Critically important	3.8%
5.7%	Very important	11.5%
28.6%	Important	26.9%
34.2%	Somewhat important	30.9%
14.3%	Not important	19.2%
8.6%	No response	7.7%

Table 6
Importance of Fluency in a Third Language for International Business Purposes

American perspective		British perspective
Percent	Importance	Percent
0.0%	Critically important	0.0%
2.9%	Very important	3.8%
14.3%	Important	7.7%
20.0%	Somewhat important	19.2%
45.7%	Not important	53.9%
17.1%	No response	15.4%

(8-9 tie) Korean and Russian, (10) Chinese, and (11) Arabic. In contrast, Kilpatrick (1984) found a different ranking order, (1) Spanish, (2) French, (3) German, (4) Portuguese, and (5) Swiss, in part because the American businesses she studied corresponded much more frequently with Latin American countries than did the businesses reported in this study. From the perspective of the responding British companies, the foreign languages used in incoming international business correspondence are ranked in this decreasing order of frequency: (1) French, (2) German, (3) Spanish, (4) Arabic, (5) Italian,

Table 7
Percentages of Employees Fluent for Business Purposes in a Second Language

American perspective		British perspective
Percent of companies	Percent of employees	Percent of companies
48.6%	1-10%	57.8%
5.7%	11-20%	7.7%
2.9%	21-30%	11.5%
5.7%	31-40%	3.8%
5.7%	41-50%	3.8%
2.9%	51-60%	0.0%
0.0%	61-70%	0.0%
2.9%	71-80%	0.0%
0.0%	81-90%	0.0%
2.9%	91-100%	0.0%
22.7%	No response	15.4%

Table 8
Percentages of Employees Fluent for Business Purposes in a Third Language

American perspective		British perspective
Percent of companies	Percent of employees	Percent of companies
60.0%	1-10%	69.4%
5.7%	11-20%	3.8%
2.9%	21-30%	3.8%
2.9%	31-40%	3.8%
2.9%	41-50%	0.0%
0.0%	51-60%	0.0%
0.0%	61-70%	0.0%
0.0%	71-80%	0.0%
0.0%	81-90%	0.0%
0.0%	91-100%	0.0%
25.6%	No response	19.2%

Table 9
Primary Means by Which Employees Obtained Competency for Business Purposes in Their Second and Third Languages

American perspective		British perspective
Percent	Means	Percent
8.6%	Prior schooling or military training	23.1%
40.0%	Company-provided instruction	15.4%
2.9%	Employee-provided instruction	7.7%
17.1%	Previous residency abroad	0.0%
8.6%	Family associations	0.0%
0.0%	Some combination of the identified primary means	42.3%
22.8%	No response	11.5%

(6-7 tie) Japanese and Portuguese, (8) Russian, (9) Chinese, (10) Korean, and (11) Other. French, German, and Spanish are the foreign languages used most often in incoming international

business correspondence in both countries, and Chinese and Korean are the foreign languages used less frequently in incoming international business correspondence in both countries.

American and British providers of education and training related to incoming and outgoing international business correspondence should place primary emphasis on using the English language successfully for international business correspondence purposes. Secondary emphasis should be placed on using such foreign languages as French, German, Japanese, and Spanish successfully for international business correspondence purposes, with the emphases proportionate to the utilization of the languages in outgoing and incoming international business correspondence.

About four out of ten of the responding American and British companies usually have company employees translate incoming international business correspondence unless that correspondence is highly complex or technical. While about one out of five of the responding American companies reported that it never receives any international business correspondence written in a foreign language, none of the studied British companies reported that it never receives any international business correspondence written in a foreign language. As reported earlier in this discussion, while 19 out of 20 pieces of incoming international business correspondence for American companies are written in the English language, only 17 out of 20 pieces of incoming international business correspondence for British companies are written in English; this difference increases the likelihood that more American companies than British companies would receive only international business correspondence written in the English language. Further, international business is proportionately more important in the U.K. than in the U.S.A., and the U.K. trades extensively with non-English-speaking countries.

Since both American and British companies frequently have their own employees translate incoming international business correspondence, prospective and practicing businesspersons who are fluent for business purposes in two or more languages should have a competitive advantage over those who are fluent for business purposes in only one language, English. If a serious shortage of businesspersons who are fluent for business purposes in two or more languages or in certain combinations of languages exists, then market forces may cause companies to pay a premium to obtain employees who are fluent for business purposes in the necessary languages.

American and British providers of education and training should respond to the increasing demand in both countries for employees who can translate business documents from and into one or more foreign languages. Such educational programs must be structured carefully to ensure that prospective and practicing businesspersons develop a high degree of fluency for business purposes in the studied foreign languages. Specialized business vocabulary will have to be emphasized in such education and training programs, as will translation of a wide variety of business-related documents with a high degree of accuracy.

Both the American and British respondents most frequently recommended the same four foreign languages as having the most utility for business purposes, French, German, Japanese, and Spanish, although they did so in different orders. Kilpatrick's 1984 study of American businesses found the same four foreign languages most frequently recommended for study for business purposes but in an order different from the American and British respondents in the current study. The fact that Japanese was the most frequently recommended foreign language by American company representatives and the fourth most frequently recommended foreign language by British company representatives may reflect in part the growing Japanese share of world trade rather than the actual usage of the Japanese language in outgoing and incoming international business correspondence. It should be recalled from previously presented study data that in terms of frequency of usage, Japanese is ranked by American respondents as the fifth most frequently used foreign language in outgoing international business correspondence, by British respondents as the sixth to eighth most frequently used foreign language in outgoing international business correspondence, by American respondents as the fourth most frequently used foreign language in incoming international business correspondence, and by British respondents as the sixth or seventh most frequently used foreign language in incoming international business correspondence. The recommendations of both French and German by the American and British respondents seem quite reasonable and prudent given the reported usages of these languages in outgoing and incoming international business correspondence. The recommendation of Spanish by both the American and British respondents seems reasonable, too, but less so for the British in terms of the relatively minor role of the Spanish language in outgoing--but not incoming--international business correspondence.

Although English is the dominant language of international business, native speakers of English should develop foreign language skills for business purposes since many international businesspersons prefer to transact business in their own native languages (Segal, 1987). The problem of which additional languages native speakers of English should learn for business purposes is challenging since there is no clear answer. While mastery of any foreign language will have at least some utility for business purposes in some circumstances, prospective and practicing businesspersons will probably obtain the greatest utility for business purposes from one of the major languages of the world. Major world languages that are used either by a number of important trading countries or by a world-dominant trading country appear to be prudent choices. Among the more useful business foreign languages for native speakers of English are French, German, Japanese, and Spanish. Other potentially useful business foreign languages for native speakers of English include Arabic, Chinese, Italian, Korean, Portuguese, and Russian.

American and British providers of business foreign language education and training should focus most of their efforts around providing high-quality instruction in the foreign languages with the most potential for business use, especially French, German, Japanese, and Spanish. Providers without severe funding constraints and those with well-established general foreign language training programs in less important business foreign languages should consider making business foreign language instruction available in other languages, including Arabic, Chinese, Italian, Korean, Portuguese, Russian, and possibly others. Potential and practicing international businesspersons should likewise choose business foreign languages based on their potential usefulness in facilitating international trade.

Both the American and British respondents have similar perceptions regarding the importance of fluency for business purposes in a second language, with somewhat less than half perceiving its importance as critically important, very important, or important. While about twice as many American as British respondents perceived fluency in a second language for business purposes to be critically important, about twice as many British as American respondents perceived fluency in a second language for business purposes to be very important.

Both the American and British respondents have similar perceptions regarding the importance of fluency for business purposes in a third language, with no respondents perceiving it as critically important and with about one out of two respondents perceiving it as not important.

Given prevailing American and British perceptions about the importance of second and third languages for business purposes, prospective and practicing American and British international businesspersons would appear to be adequately prepared for international business purposes in terms of language skills if they could transact business in both English and a second language. Potential and practicing American and British international businesspersons should actively pursue the development of fluency for business purposes in one foreign language since demand for these skills will increase as the globalization of trade evolves.

About five out of ten of the responding American companies and about six out of ten of the responding British companies have from one to ten percent of their company employees fluent for business purposes in a second language. American companies tend to have their company employees who are fluent for business purposes in two languages dispersed over more of the employee categories than do the British companies.

About six out of ten of the responding American companies and nearly seven out of ten of the responding British companies have from one to ten percent of the company employees who are fluent for business purposes in a third language. American companies again tend to have their employees who are fluent for business purposes in a third language dispersed over more of the employee categories than do the British companies.

Since most of the studied American and British companies currently have between one and ten percent of their respective employees fluent for business purposes in a second and a third language and since many of the studied companies use their own employees as translators, there is a market for native English-speaking businesspersons who can transact business in more than one language. It is probable that since the idea of having language skills for transacting business in more than one language is increasingly accepted in both the U.S.A. and the U.K., an increasing number of newly hired workers, especially younger workers, will have at least bilingual skills for business purposes. The percentages of businesspersons possessing such language skills will increase over time and will vary somewhat from company to company and from country to country. As the British myth that any untrained Briton can be an effective businessperson is further debunked, the distributions of bilingual and trilingual businesspersons in the U.K. and the U.S.A. will tend to become more alike.

Based on study data, bilingual and trilingual employees of American companies most often develop their competency for business purposes in second and third languages through company-provided instruction and previous residency abroad, which parallel Inman's (1985) findings, while comparable employees of British companies most often develop their competency for business purposes in second and third languages through some combination of the identified primary means, prior schooling or military training, and company-provided instruction. Differences in the secondary and higher education of students contribute to the observed patterns. In the U.S.A. much less emphasis is placed on learning a second language than in the U.K., which lags well behind its European counterparts in this regard; since most employees of American businesses have not developed needed foreign-language competencies during their secondary or higher education, American businesses must provide needed foreign language instruction for employees.

A wide variety of means to develop needed business foreign language skills should continue to be made available to prospective and practicing international businesspersons in the U.S.A. and the U.K. Education and training programs that integrate both foreign language and business studies should be developed and refined further. Since such programs have evolved in the U.K. since the 1960s, business education in the U.S.A. may want to consider the models that have developed in the U.K., which run the gamut from very limited to almost total integration of foreign language and business content (Scott, 1991). Traditional and nontraditional delivery systems should be utilized in both countries to develop the business foreign language skills of practicing international businesspersons. Given the importance of professional qualifications in the U.K., the various examining and validating bodies should be encouraged to develop a variety of international-business-related qualifications, including ones in international business correspondence and communication.

This exploratory study sheds some light on foreign-language-related matters impacting international business correspondence

in two major English-speaking countries; nevertheless, it leaves unexplored other important language-related aspects of international business communication. Not only should a similar study be conducted in five to ten years to assess changes in language-related aspects of international business correspondence in the U.S.A. and the U.K., but also other studies should explore other aspects of international business communication and other English-speaking countries.

Overall, the data suggest that the business communities of the U.S.A. and the U.K. as represented by their respective 100-largest trend-setting companies have distinctive perspectives regarding foreign languages and international business correspondence that sometimes parallel each other and that sometimes diverge. Although most international business correspondence involving the U.S.A. and the U.K. is conducted in the English language, other languages, especially French and German and to a lesser degree Spanish, are used. Since it is common practice in both countries to have employees translate business correspondence, there is a need for and a market for employees who can transact business in more than one language. American and British respondents most frequently recommend the foreign languages of French, German, Japanese, and Spanish for business purposes, but they do so in different orders. Respondents from both countries generally agree that fluency for business purposes in a second language--but not a third language--is desirable; however, most of the studied businesses in both countries have small percentages of employees who can transact business in more than one language. While employees of American-based companies tend to develop fluency for business purposes in other languages through company-provided instruction and previous residency abroad, employees of British-based companies tend to develop fluency for business purposes in other languages through a combination of primary means, prior schooling or military training, and company-provided instruction. All of this suggests that in both the U.S.A. and the U.K., there currently is a need for and a growing market for native English-speaking businesspersons who can also transact business in other languages. Providing language-related education and training for prospective and practicing businesspersons in both countries is an emerging growth area for business education that should be actively pursued.

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Knowledge of Entrepreneurship: Vocational Business and Marketing Teachers as Compared to Other Vocational Teachers

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Abstract

This study compared the entrepreneurship knowledge base of teachers certified to teach vocational education in Northwest Ohio. The research questions related to a vocational teacher's current knowledge of entrepreneurship, the differences in the teacher's knowledge based on program areas, and the differences in the teacher's knowledge based on certification.

This study provides evidence that the entrepreneurship knowledge base of vocational education teachers varies based upon teaching program area and the type of certification a teacher holds. Teachers certified in marketing or business seem to be more knowledgeable of entrepreneurship than teachers not certified in marketing or business.

Introduction

Throughout the past decade, creation of new small businesses has been a major economic development in this country. As unemployment rises, individuals tend to become self-employed. Nationally, over 600,000 small businesses were created annually prior to the current recession. The U.S. Small Business Administration (1986) predicted that the number of small businesses will continue to grow. Yet, "business failures resulting in court bankruptcy proceedings were up for 17 consecutive months through last July, the latest available figures, according to the Dun & Bradstreet Corporation" (Thompson, 1992, p. 16).

In light of this current economic situation, assuring success of small business becomes even a greater priority for the benefit of the labor workforce. According to Ely, Berns, and Popo (1990), two majors reasons for business failure are the lack of adequate preparation and the incompetence of the owner. As small business ownership emerges as an educational field (entrepreneurship), policy makers must determine the qualifications necessary for teachers to receive a teaching certificate in this area.

Statement of the Problem

In the state of Ohio, the Department of Education is currently allowing all instructors who hold a vocational certificate to teach high school entrepreneurship. The certificate can be in business education, marketing education, or any other vocational program area (e.g., agriculture, home economics, or trade and industrial).

As part of their teacher preparation programs, business and marketing teachers complete a variety of business administration courses (e.g., marketing, management, accounting) that relate to entrepreneurship. On the contrary, most vocational education teachers outside business and marketing do not have this type of instruction. Therefore, the researchers hypothesized that business and marketing teachers would possess a greater degree of knowledge related to entrepreneurship than other vocational teachers. This study is designed to test that hypothesis by comparing the knowledge base of business and marketing teachers with the knowledge base of other vocational teachers based upon the entrepreneurship competencies taught in entrepreneurship classes in Ohio.

Research Objectives

This study was designed to meet the following research objectives:

1. to determine the level of knowledge Northwest Ohio vocational business and marketing teachers and other vocational education teachers possessed regarding entrepreneurship,
2. to determine the differences between the knowledge of Northwest Ohio vocational business and marketing teachers and the knowledge of Northwest Ohio teachers in other vocational program areas regarding entrepreneurship, and
3. to determine the differences between the knowledge of Northwest Ohio vocational education teachers by certification area.

Purposes of the Research

The purpose of this study was to compare the knowledge base of vocational business and marketing teachers with the knowledge base of other vocational teachers. This information would provide valuable input as the State Department of Education decides who should be issued teaching certificates to teach entrepreneurship.

Another purpose was to assist local school administrators in assigning the most qualified instructors to teach entrepreneurship classes. Even though all vocational teachers are currently certified to teach entrepreneurship in Ohio, differences may exist among the teachers based upon the program area in which the individuals are certified.

Assumptions

It seems logical that a teacher needs a solid knowledge base in order to teach a subject effectively, resulting in higher student achievement. This study was based upon the assumption that teachers should be knowledgeable in the area of instruction. Therefore, entrepreneurship instructors should have knowledge of the competencies they are teaching to students before being assigned to that class.

Delimitation

In measuring the teachers' knowledge of entrepreneurship, the researchers used only the list of competencies provided by the Ohio Department of Education as the basis of the instrument since the competencies on this list are required to be taught in all entrepreneurship classes. It is possible that this list of competencies did not include all competencies that could be taught in an entrepreneurship course.

Procedures

Source of Data

The population for this study was all 1,109 vocational education teachers in Northwest Ohio. The population included 172 business teachers, 55 marketing teachers, 170 agriculture teachers, 252 home economics consumer and homemaking teachers, 46 home economics job training teachers, and 414 trade and industrial education teachers. The entire population was surveyed.

The overall response rate of business and marketing teachers was 60.6% and the response rate for the other vocational teachers was 46.7%. Response rates appear in Table 1.

Table 1
Response Rates

Program Area	Number Surveyed	Number of Respondents	Response Rate (%)
Agriculture	170	76	44.70
Business	171	104	60.80
Home Economics Job Training	46	21	45.70
Home Economics Consumer & Homemaking	247	125	50.60
Marketing	55	33	60.00
Trade & Industrial	409	186	45.50
Did not respond to question related to program taught		24	
TOTAL	1,098	569	51.80

A follow-up procedure was used to determine if a difference existed between the scores of those who responded and of those who did not respond. Since one of the reasons for non-response may have been the length of the instrument, the test was divided into eight versions, with versions 1-7 consisting of five items each and version 8 consisting of 4 items. Follow-up instruments were sent to teachers based upon their program area, and each non-respondent was mailed one version of the test.

Of the 529 non-respondents surveyed in the follow-up mailing, 186 returned the instrument, for a follow-up return rate of 35.2%. T-tests were run for each version of the instrument, comparing the items on that version of the follow-up with the same items on the original instrument.

No significant differences were found for any of the versions of the instrument between respondents and non-respondents to the initial survey. Therefore, there is no evidence to indicate that the initially non-responding teachers of this study were less knowledgeable about entrepreneurship than the teachers who initially responded on each of the eight sets of items.

Instrumentation

The instrument was developed by the researchers and was composed of 39 test items that measured the subject's knowledge related to the 39 competencies required to be taught in entrepreneurship classes by the Ohio Department of Education. One item per competency appeared on the instrument. About half of the test items were purchased from a curriculum development organization while the other half were written by the researchers.

The instrument was validated by research evaluation experts. Each item was studied in relationship to the competency it was to measure. Items were revised accordingly. In addition to this content validity procedure, a pilot study was conducted during which 33 vocational teachers, including business and marketing, from outside Northwest Ohio were administered the instrument. Items were revised based upon pilot test subjects' input and reliability information. The KR-20 reliability coefficient for the final instrument administration was .731.

Data Collection and Analysis

The instrument was mailed to all vocational education teachers in Northwest Ohio. The data were inputted onto magnetic tape at Bowling Green State University by the Computer Services department. Appropriate statistical analyses were conducted to answer the research questions of the study.

Findings

The findings were organized based upon the research objectives of this study.

Descriptive statistics for the results of the test appear in Table 2. Test scores ranged from 2-35 correct responses, with 39 being the

highest possible score. The highest mean score was attained by the marketing teachers, followed by business teachers, home economics job training teachers, agriculture teachers, home economics consumer and homemaking teachers, and trade and industrial education teachers.

Table 2
Means and Standard Deviations of Test Scores Overall and by Program Area

Group	n	Mean	Standard Deviation
Marketing	33	28.82	4.57
Business	104	25.63	4.02
Home Economics/ Job Training	21	24.38	2.64
Agriculture	76	24.36	3.44
Home Economics/ Consumer & Homemaking	125	23.14	3.41
Trade & Industrial	186	22.89	4.34
OVERALL	545	24.09	4.21

Significant differences were found among the program area group mean scores (Table 3). In Table 4, if a number appears at the intersection of a row and column, then there was a significant difference at the .05 level. The number presented is the effect size. To determine the direction of the difference, the reader should consult the means column. For example, agriculture teacher scores were significantly higher than trade and industrial education teachers with an effect size of 1.47.

Table 3
Analysis of Variance for Entrepreneurship Test Scores by Program Area

Source	df	Sum of Squares	Mean Squares	F	p
Between groups	5	1372.8	1274.56	17.88	.00*
Within groups	539	8274.96	15.35		
Total	544	9647.77			

*$p < .05$

If an effect size does not appear at the intersection of a row and column, then there was not a significant difference between the two groups. For example, there was not a significant difference between the scores of agriculture teachers and the scores of home economics job training teachers.

As shown in Table 4, marketing teacher scores were significantly higher than all of the other group scores. Business teacher scores were significantly higher than agriculture, home economics consumer and homemaking, and trade and industrial education teacher scores.

Table 4
Duncan Test and Effect Sizes

Mean	Program Areas	T & I	H.E. Cons. & Home.	Ag	H.E. Job Training	B.E.	M.E.
22.89	Trade & Industrial						
23.14	Home Econ./ Consumer & Homemaking						
24.36	Agriculture	1.47[a]	.36				
24.38	Home Econ./ Job Training						
25.63	Business	.63	.73	.37			
28.82	Marketing	1.37	1.67	1.30	1.68	.80	

[a]Effect size.

There were differences based on the areas in which the individual was certified to teach as shown in Table 5. Teachers certified in marketing scored significantly higher on the test than teachers not certified in marketing with an effect size of 1.18 (see Table 5). The same result was found for teachers certified in business (effect size = .67). However, teachers certified in occupational work experience (OWE) or trade and industrial scored significantly lower on the test than teachers not certified in OWE (effect size = .36) or T & I (effect size = .46). No difference was found between teachers certified and teachers not certified in the following areas: agriculture, health, home economics/consumer and homemaking, home economics/job training.

Table 5
T-tests for Certification Area of Teachers

Certification Area	n	Mean	SD	t	df	p	Effect Size
Marketing							
Certified	40	28.45	4.33	7.11[a]	549.00	.00*	1.18
Not Certified	511	23.82	3.94				
Business							
Certified	114	26.35	3.35	7.34[b]	208.90	.00*	0.67
Not Certified	438	23.64	4.08				
Occupational Work Experience							
Certified	42	22.83	4.92	-2.21[a]	549.00	.03*	0.36
Not Certified	509	24.29	4.02				
Trade & Industrial							
Certified	155	22.90	4.45	-4.34[b]	249.77	.00*	0.46
Not Certified	395	24.67	3.86				
Agriculture							
Certified	79	24.18	3.92	.20[a]	552.00	.84	
Not Certified	475	24.08	4.26				
Health							
Certified	27	23.11	2.64	-2.06[b]	33.12	.05*	0.26**
Not Certified	525	24.22	4.18				
Home Economics/ Consumer & Homemaking							
Certified	143	23.22	3.39	-3.68[b]	307.96	.00*	0.30**
Not Certified	412	24.52	4.25				
Home Economics/ Job Training							
Certified	41	23.98	3.98	-.29[a]	549.00	.77	NA
Not Certified	510	24.17	4.17				

[a]Pooled variance estimate (t,df,p)
[b]Separate variance estimate (t,df,p)
*$p < .05$
**not deemed important since effect size $< .33$
NA: not appropriate unless difference is statistically significant.

Conclusions and Recommendations

This study provides evidence that the entrepreneurship knowledge base of vocational education teachers varies based upon teaching program area and the area of certification a teacher holds.

Teachers certified in marketing or business seem to be more knowledgeable of entrepreneurship than teachers not certified in marketing or business. The research suggests that marketing teachers have the most knowledge of entrepreneurship, followed by business teachers.

Recommendations

The following recommendations are offered based upon the findings and conclusions of this study:

1. As a relatively new instructional area in vocational education, the Ohio Department of Education should carefully consider who should be certified to teach entrepreneurship. Apparently, all teachers holding vocational certificates are not knowledgeable of entrepreneurship at the same level. Qualifications such as the area in which the teacher is vocationally certified should be considered. Specifically, business and marketing teachers should be certified while teachers in other certification areas should not be certified to teach entrepreneurship.
2. Local administrators should consider the findings from this study when assigning teachers to entrepreneurship classes.
3. Extensive inservice activities should be targeted especially toward teachers in such program areas as trade and industrial education, health, and home economics/consumer and homemaking if they are planning to teach entrepreneurship.
4. Further research should be conducted to verify the results of this study statewide.

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Nontechnical Competency Instruction in Illinois Secondary and Postsecondary Business Education

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Abstract

Nontechnical competencies of workers continues to be a major area of concern to employers. This study sought to determine how nontechnical competency instruction was being addressed in Illinois secondary and postsecondary business education courses and the perception of business education instructors concerning their preparation to deliver nontechnical competency instruction. Findings revealed that the degree to which nontechnical instruction is delivered depends upon the type of business course. A majority of the competencies identified were being addressed to some degree. Instructors indicated they would feel more comfortable teaching nontechnical competencies if they had been addressed and discussed in college courses and if more appropriate materials were available. Recommendations included defining and distributing curriculum for nontechnical instruction.

Introduction

Employee nontechnical competency continues to be an area of concern to employers. Importance of nontechnical competency instruction is constantly reiterated by employers who seek employees with training in all aspects of work, not just technical skills. Ability to perform effectively in every aspect of employment determines job success.

The Commission on the Skills of the American Workforce (1990) found that the primary concern of more than 80 percent of employers is finding workers with a good work ethic and appropriate social behavior--"reliable, a good attitude, a pleasant appearance, and a good personality." This position is further emphasized in the SCANS Report (1991) which identified five competencies and a three-part foundation of skills and personal qualities that lie at the heart of job performance. The report stated that "these eight requirements are essential preparation for all students, both those going directly to work and those planning further education. Thus, the competencies and the foundation should be taught and understood in an integrated fashion that reflects the workplace contexts in which they are applied" (p. xv).

Smith & Boyd (1986) indicated that lack of professional traits and characteristics necessary for professional success rather than knowledge and job skills are the reasons that employees are dismissed or not promoted. This is certainly nothing new to business educators--results of every research study conducted on needs of the business workplace rank nontechnical skills as the highest need (Anderson-Yates, 1991). Wentling (1987) stated that failure to include employability skills in classroom teaching is due to educators not knowing which factors to stress or how to instill the needed personal qualities in students.

Problem and Research Questions

The problem of this study was to determine the (1) nature of nontechnical competency instruction in Illinois secondary and postsecondary business education courses, and (2) perception of business education instructors concerning their preparation to deliver nontechnical competency instruction.

Answers to these research questions were sought: (1) To what degree are nontechnical competencies taught in specific business courses? (2) How frequently are nontechnical competencies taught in specific business courses? (3) What instructional methods/materials are being used to teach nontechnical competencies? (4) How well do business education instructors feel they are prepared to teach nontechnical competencies?

Literature Review

From the literature reviewed, it is obvious that nontechnical competencies are a vital component reflecting the degree to which students will be successful in their chosen careers. Poole (1985), Nellermore (1992), Bartholome (1991), Goree (1992), Yager (1982), Brown (1985), Greathouse (1986), and Mason (1986) agreed that businesses seek employees who are well-rounded. Employers want employees who have good human relations and problem solving skills and professional characteristics.

Business educators need to work with businesses to adapt curriculum to include adequate training in the nontechnical areas. If business educators are to prepare students for and about business, then what businesses want should be a major influence on what students are taught (Bartholome, 1991). The literature lacked any specific research on the degree to which nontechnical competency instruction is delivered in business courses or on teacher preparedness to teach such competencies.

Research Procedure

The population for this study consisted of Illinois secondary and postsecondary business education instructors as identified by the Illinois State Board of Education, Department of Adult, Vocational and Technical Education in 1991. A random sample technique was to select 350 instructors from a total population of 2822 to constitute the study sample.

A questionnaire was developed for data collection. The first section addressed demographic information regarding such characteristics as gender, age, education level completed and major, and grade level at which instructors teach. The second section of questions was designed to determine the degree to which nontechnical competencies were taught in business courses, what instructional methods and materials were used, and the type of preparation the instructor has to teach nontechnical competencies. The third section was designed to identify the frequency specific nontechnical competencies were taught and how well prepared instructors feel to teach each competency.

For the purposes of this study, nontechnical competencies referred to specific competencies selected from the *Education for Employment Task Lists* (Illinois State Board of Education, n.d.), the American Society for Training and Development's (1989) workplace basic skills, and the "Essential Employment Skill Validation Skill List" (Illinois State Board of Education, 1992). Categories of nontechnical competencies included: Appropriate Work Behavior/Work Ethics; Organizational Effectiveness/Professionalism; Interpersonal Skills/Working Relationships; Adapting to Change/Learning to Learn/Personal and Career Development Skills; Teamwork/Negotiation/Leadership; Listening/Communicating on the Job; Problem Solving/Creative Thinking; Goal Setting/Motivation/Self Esteem.

Five business instructors from high schools and community colleges not included in the sample were asked to review the instrument. Suggestions for improving the instrument were incorporated. Survey packets, consisting of a cover letter, the questionnaire and a pre-addressed postage-paid business reply envelope, were mailed to the sample. As responses were received, data were recorded on General Purpose NCS Answer Sheets for computer analysis. Using the Statistical Analysis System (SAS) available through the IBM VX/370 mainframe system at Southern Illinois University at Carbondale, descriptive data in the form of frequencies and percentage distributions were used to answer the research questions.

Responses totaled 100 or 28.8% of the sample. Of the 100 questionnaires returned, 5 were incomplete, 7 no longer taught business education, and 1 declined to participate; therefore 87 responses were used in compiling results for this portion of the study.

Findings

Respondents included 50 females and 37 males, 80% of whom were in the age range of 36 to 55 years. A majority of respondents (54%) were involved in delivering instruction at the 11th and 12th grade levels. A master's degree in business education was the highest educational level most frequently identified (30 or 26.1%) while a bachelor's degree in business education was the second most frequently stated level (25 or 21.8%).

Degree/Frequency of Nontechnical Competencies Instruction

Table 1 indicates that nontechnical competencies are taught frequently (100%) in marketing/distributive education, coop job training, human relations, and economics (only one respondent) courses. Some nontechnical competency instruction happens in courses such as keyboarding, speedwriting/shorthand, and business/consumer math. Nine or 36% of those instructors teaching computer concepts/ applications indicated they seldom teach nontechnical competencies.

Specific Nontechnical Competencies Taught in Business Education Courses

Table 2 reveals that all of the identified nontechnical competencies are being taught in business education courses by a majority of business education instructors. All of the Work Behavior/ Work Ethics competencies are taught by 83.3 (96.7%) respondents. Categories receiving emphasis by fewer instructors were Organizational Effectiveness, Professionalism and Teamwork, Negotiation, Leadership.

Instructional Methods/Materials Used to Teach Nontechnical Competencies

The most used method for teaching nontechnical competencies is lecture as reported by 81.6% of the respondents (Table 3). Demonstration (47.1%) and role playing (20.7%) are used considerably less.

Instructor Preparation for Teaching Nontechnical Competencies

According to Table 4, 83.9% of respondents indicated that personal experience prepared them to teach nontechnical competencies.

Respondents were asked to indicate how prepared they feel to teach these nontechnical competencies. A majority of respondents feel very prepared to teach Work Behavior/Work Ethics

Table 1
Degree/Frequency of Nontechnical Competencies Instruction

Course	Total n	Frequently n	Frequently %	Some n	Some %	Seldom n	Seldom %
Keyboarding 1 & 2	43	6	14.0	26	60.5	11	25.6
Keyboarding 3 & 4	27	7	25.9	14	51.9	6	22.2
Speedwriting/Shorthand	5	1	20.0	3	60.0	1	20.0
Accounting 1 & 2	24	10	41.7	13	54.2	1	4.2
Accounting 3 & 4	17	10	58.8	7	41.2	0	0
Consumer Econ./Ed.	8	6	75.0	1	12.5	1	12.5
Economics	1	1	100.0	0	0	0	0
Intro. to Business	21	13	61.9	5	23.8	3	14.3
Computer Concepts/Appl.	25	6	24.0	10	40.0	9	36.0
Computer Programming	7	4	57.1	1	14.3	2	28.6
Word/Info./Date Processing	25	6	24.0	15	60.0	4	16.0
Office Procedures/Practices	15	10	66.7	5	33.3	0	0
Marketing/Distributive	9	9	100.0	0	0	0	0
Business Management	7	6	85.7	1	14.3	0	0
Business/Consumer Math	7	1	14.3	5	71.4	1	14.3
Business Comm./English	5	5	100.0	0	0	0	0
Business Law	7	6	85.7	0	0	1	14.3
Coop Job Training	8	8	100.0	0	0	0	0
Human Relations	2	2	100.0	0	0	0	0

Note: Frequently = frequently in this class, Some = some in this class, Seldom = seldom in this class

and Interpersonal Skills, Maintain Working Relationships competencies. Competencies receiving the most "not well prepared" and "do not feel comfortable" responses included: participate in company or agency orientation, channel emotional reaction constructively, identify and react to sexual intimidation/harassment, ability to build consensus through give and take with co-workers and supervisors, direct co-workers when necessary, identify leadership style required for effective teamwork, and ability to be creative to meet changing needs.

Conclusions

Based upon the findings of this study, these conclusions are offered:

1. Nontechnical competencies are taught to some degree in all business courses identified by respondents.

2. The degree to which nontechnical competencies are taught depends upon the type of course. Most frequent instruction occurs in office procedures, advanced accounting, general business, business communication, business management, and coop job training courses. Less frequent instruction occurs in keyboarding, beginning accounting and business math.

3. When teaching nontechnical competencies, instructors use the lecture method most frequently. More active learning methods, such as role playing and group discussions, are used minimally.

4. Business education instructors gained most of their preparation to teaching nontechnical competencies from personal experiences, and they generally feel prepared to teach these competencies; however, they would feel more comfortable teaching these competencies if they had been addressed and discussed in college courses.

Recommendations

Based on findings and conclusions of this study, these recommendations are made:

1. Employers increasingly seek more resourceful and creative employees. To prepare students for the challenges that await them, business educators must teach and develop nontechnical competencies.

2. Instructional materials to teach nontechnical competencies need to be developed and incorporated into business education courses.

3. College/university courses need to better prepare business education instructors to teach nontechnical competencies. Seminars and workshops on teaching nontechnical competencies should be offered to business education instructors to enhance their skills and keep educators aware of teaching methods and materials available.

Table 2
Specific Nontechnical Competencies Being Taught

Nontechnical Competencies	Number of Responses	% of Total Responses
Work Behaviors/Work Ethics		
Exhibit dependability	84	96.6
Demonstrate punctuality	84	96.6
Follow rules, regulations and policies	85	97.7
Recognize the consequences of dishonesty	81	93.1
Complete assignments accurately & timely	85	97.7
Control emotions	81	94.2
Assume responsibility for own decisions and actions	84	97.7
Exhibit pride and loyalty	81	95.3
Exhibit ability to handle pressure and tensions	83	97.6
Demonstrate ability to set priorities	84	98.8
Demonstrate problem solving skills	85	98.8
Organizational Effectiveness, Professionalism		
Understand company's goals and how job contributes to fulfilling those goals	75	88.2
Participate in company of agency orientation	62	72.9
Demonstrate knowledge of company or agency products and services	65	76.5
Exhibit positive behavior	83	96.5
Read current job related publications	70	81.4
Support and promote employer's company image and purpose	72	84.7
Maintain appearance to comply with company standards	75	88.2
Interpersonal Skills, Maintain Working Relationships		
Get along with others/value individual diversity	84	97.7
Work productively with others	84	96.6
Show empathy, respect and support for others	84	96.6
Demonstrate procedure and assist others when necessary	86	98.9
Recognize, analyze and solve or refer problems/conflicts	84	96.6
Provide or respond to praise or criticism constructively	80	93.0
Minimize occurrence of problems	79	91.9
Channel emotional reaction constructively	77	89.5
Identify and react to sexual intimidation/ harassment	67	77.9
Adapting to Change, Learning to Learn, Personal and Career Development Skills		
Recognize need to change	84	96.6
Demonstrate willingness to learn	83	96.5
Demonstrate flexibility	83	96.5
Participate in continuing education	80	93.0
Seek work challenges	80	93.0
Adjust career goals/plans as needed	81	94.2
Acquire new information and skills and apply to job	82	94.3
Understand need to continually develop on the job	83	95.4
Teamwork, Negotiation, Leadership		
Ability to divide work equitably and effectively and to work with one another to achieve team goals	74	85.1
Ability to build consensus through give and takewith their coworkers and supervisors	74	85.1
Assume responsibility	81	94.2
Direct coworkers when necessary	75	87.2
Identify leadership style required for effective teamwork	67	77.9
Listening, Oral Communication, Communicating on the Job		
Ability to follow oral and written instructions	86	98.9
Ability to listen and ask questions	86	98.9
Ability to understand concerns of coworkers and others	81	94.2
Ability to communicate clearly and correctly with others	83	96.5
Ability to use body language/non-verbal communication effectively	72	83.7
Problem Solving, Creative Thinking		
Ability to analyze problems and come up with solutions	86	98.9
Ability to be creative to meet changing needs	82	95.3
Goal Setting/Motivation and Self Esteem		
Ability to take initiative	83	96.5
Ability to set objectives and persistence to achieve them	83	96.5
Ability to be proud of self and abilities	82	95.3

Table 3
Methods/Materials Used to Teach Nontechnical Competencies

Methods/ Materials	Number of Responses	% of Total Responses
Lecture	71	81.6
Role Playing	18	20.7
Discussion	62	71.3
Questioning	66	75.9
Demonstration	41	47.1
Case Studies	28	32.2
Overheads	43	49.4
Reading Assignments	41	47.1
Films/Video	39	44.8
Learning Activities/Modules	46	52.9
Group Projects	5	17.4
Simulations	2	2.3
Other	6	6.6

Note: Respondents were asked to check all methods and materials they use in teaching nontechnical competencies.

table continued

Table 4
Types of Preparation for Teaching Nontechnical Competencies

Preparation	Number of Responses	% of Total Responses
College/University Courses	64	73.6
Workshops	57	65.5
Personal Experiences	73	83.9
Seminars	38	43.7
Work Experiences	66	75.9
Reading	1	1.1
Committee Service	1	1.1

Note: Respondents were asked to check all types of preparation they have had to teach nontechnical competencies.

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The Occupational Profile and On-the-Job Experiences/Perceptions of Office Management Technology Associate Degree Graduates and Their Employers and the Resulting Curriculum Implications

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Abstract

This five-year follow-up study of associate degree Office Management Technology graduates and their employers was conducted for the purpose of evaluating and updating the curriculum. The conclusions offer an occupational profile of the typical graduate as well as a profile of employer characteristics, perceptions, and preferences concerning the curriculum and graduate preparation and performance on the job. Curricular implications deal with content that should continue to be emphasized and recommended changes to the curriculum.

Introduction

Because technology has been rapidly changing the nature of office work, it is essential that faculty of programs which provide training for management support personnel be aware of the knowledge and skills currently needed by the graduates of these programs. Although knowledge gained from the literature and model postsecondary curricula are helpful to faculty in shouldering this responsibility, of equal importance is the feedback that can be provided by graduates of the program and their employers. Graduate input about their curricular and on-the-job experiences, as well as employers' opinions regarding their preparation, can provide valuable insights for the evaluation and refinement of a program.

Purpose

It is the purpose of this study to gather such information from Office Management Technology graduates from 1986 to 1990 and their employers for consideration by the faculty and administration in order to make recommendations for updating and revising the curriculum. This study is also part of a comprehensive assessment program of Regional Campuses' programs and services.

Objectives

The objectives of the follow-up study are to:

1. Identify graduates' current positions and how they relate to the Office Management Technology program.
2. Establish an occupational profile for the Office Management Technology graduate.
3. Obtain graduates' input for improvement of the Office Management Technology Program.
4. Obtain graduates' assessment of the Office Management Technology program's curriculum, instruction, and equipment.
5. Obtain employers' assessment of preparation of the Office Management Technology graduates.
6. Obtain employers' input for improvement of the Office Management Technology Program.
7. Obtain employers' projection of need for office support positions in their organizations.
8. Propose recommendations for the revision and improvement of the Office Management Technology Program.

Methodology

This study was an *ex post facto* research design which used the descriptive, survey method to gather comprehensive data from the associate degree graduates and their employers. The responses to the survey instruments were subjected to descriptive statistical analyses.

Instruments

The reliability of the instrument for graduates was determined by means of a pilot study which involved Office Management Technology graduates from years previous to those surveyed.

Procedures

The graduate questionnaire, along with a cover letter from the Academic Dean of the Regional Campuses, a computer grid sheet, an involvement volunteer form, and two self-addressed, stamped envelopes, was mailed to all 155 of the graduates of the program from 1986 to 1990. All of the graduates surveyed were female. About three weeks after the first mailing, a follow-up letter was mailed to nonrespondents. Two weeks following the second mailing, most of the remaining nonrespondents were contacted by telephone and sent an additional copy of the questionnaire if requested. Graduate respondents for the study totaled 64 for a response rate of 41 percent.

Employer questionnaires and a cover letter from the Academic Dean were mailed to the sixty-two employers identified by the responding graduates. A week after the response date requested, telephone follow-up calls were made to employers. Employers returned 34 surveys, yielding a response rate of 55 percent.

Findings

Current Job Titles

Current job titles of the respondents are varied as indicated in Table 1; but almost half have "secretary" in their job title.

Table 1
Current Job Title

Job Title	Number	Percent
Secretary	30	49.2%
Assistant	8	13.1%
Clerical/Word Processor/Accounting	8	13.1%
Sales/Customer Service	5	8.2%
Manager	3	4.9%
Receptionist	2	3.3%
Unrelated	3	4.9%
No response	2	3.3%

Major Job Responsibilities

The respondents' ranking of the five major responsibilities in their current position resulted in a list of 90 activities. The most frequently cited responsibilities were **telephone** (23), **typing/editing documents** (21), **bookkeeping/accounting duties** (20), **public relations/receptionist duties** (15), **selling/customer service** (12), **computing** (11), **filing** (11), and **payroll** (10). Of these eight responsibilities, three categories deal with interpersonal communications while the remaining five relate to specific technical skills.

Office Equipment

Graduates were asked to indicate which items of a list of equipment were used on the job. Table 2 summarizes the office equipment identified by the 59 respondents.

Table 2
Office Equipment Used in Current Position (n=59)

Equipment	Frequency	Percent
Telephone System	42	84%
Facsimile (FAX)	33	66%
Calculator	33	66%
Electronic Typewriter	32	64%
With memory	16	
Without memory	16	
Voice Mail	7	14%
Other	21	36%

Use of Computer

Over two-thirds (67.2 percent) of the respondents **use a computer** on the job while over one-fourth (26.6 percent) do not. Of those respondents who use a computer, the most frequently cited brand was **IBM.** Other computer configurations used by respondents appear in Table 3.

Table 3
Type of Computer Used in Current Position (n=49)

Type of Computer	Frequency	Percent
Standalone PC	31	63%
Networked PC	16	32%
Terminal/Mainframe	14	27%
Laptop	1	2%
Other	1	2%

Computer Applications

Respondents were asked to rank their frequency of use of computer application software within each of two groups. Table 4 reflects the rankings of the respondents.

Table 4
Type of Computer Applications Used

Group I Applications n=54	*Most Used	Second	Third	Fourth	Least Used	Total Used	%
Word Processing	35	4	3	-	-	42	78%
Spreadsheets	6	16	1	3	-	26	48%
Database Management	6	5	3	-	-	14	26%
Presentation Graphics	1	2	5	2	1	11	20%
Desktop Publishing	1	3	2	1	1	8	15%
Group II Applications n=52							
Communication/Transmission	9	3	-	-	-	12	23%
Electronic Mail	6	1	3	-	-	10	19%
Calendar	3	3	3	-	-	9	17%
Project Management	3	3	-	-	-	6	11.5%
Programming	3	-	-	-	-	3	6%
Other	2	1	-	-	-	3	6%

*Note: Three respondents ranked multiple applications as "most used."

Promotions

Nearly half, 48.4 percent, of the respondents have received promotions since graduation. Six of the 31 respondents who were promoted had received two or three promotions.

Salary

The annual salaries of the respondents range from "under $10,000" to a high of $30,000. Over half (57 percent) earn between $15,000 and $19,999.

Professional Development

Thirty-nine percent (25) of the respondents have attended professional development or training seminars during the previous two years. **Most** of the courses taken (16) were **computer related**. The **second type** of courses most often attended were related to a **business specialty**; for example, banking, insurance, collections, public relations, and sales. Other courses reported were related to some specific business function such as payroll or customer service.

Over two-thirds (67.2 percent) of the respondents have not taken additional coursework since graduation. Of the 18 (28.1 percent) respondents who did take additional coursework, 15 took the courses at a Kent State University campus.

A few (12.5 percent) respondents are members of a professional organization. Their memberships are in eight organizations. The organizations in which they have membership would indicate that the respondents are a secretary, student, teacher, or manager.

Graduates' Recommendations for Curriculum

Graduates were asked to list in rank order what they thought the five most important areas of study in the Office Management Technology curriculum should be. Their responses indicate they perceive **Communication/Human Relations Skills** and **Computer Skills** to be tied for the first-place position of importance, followed closely by **Technical Skills**. **Management** is also considered to be an important area of study, but was listed less frequently than the first three areas in importance. **Office Procedures** and **Bookkeeping/Accounting** received almost equal responses for being the fifth most important area of study.

What Graduates Wished They Would Have Learned

Graduates were asked what they wish they would have learned in their degree program that they did not learn. Seventy-six percent of the responses indicate "more computer training." A summary of all responses is in Table 5.

Table 5
What Office Management Technology Graduates Wish They Would Have Learned in Their Program But Think They Did Not Learn (n=50)

Wish They Would Have Learned	Frequency	Percent
Computer Training	38	76%
General Business Knowledge	15	30%
Communication/Human Relations	10	20%
Shorthand	6	12%
Management Skills	4	8%
Math	3	6%
Office Machines	3	6%
General	5	10%

Quality of Curriculum/Instruction

Most of the respondents (95 percent) **are satisfied** with the training received in the Office Management Technology program and **would recommend** it to others. Most of the reasons given for the positive response were based on the **quality of the instruction** received. The second group of reasons for recommending the program centered on the perception that the **content of the curriculum**, especially hands-on experiences, was what helped the respondents **find their jobs**. The remaining responses relate to the **personal growth and challenge** respondents received from their experience in the program.

When asked how well the curriculum prepared them for a position in the Office Management Technology field, the majority of the respondents answered "very well" (43.3 percent), or "well" (43.3 percent).

When asked to rate the quality of instruction they received, over half (54.1 percent) of the respondents considered it **Excellent,** 39.3 percent thought it **Good,** and only 6.6 percent ranked it as **Fair.**

Quality/Availability of Equipment

Most of the responding graduates considered the quality (59 percent) and availability (52.5 percent) of the equipment to be **Good.** However, over one-fourth of the respondents rated equipment quality (29.5 percent) and its availability (26.2 percent) as **Excellent**.

Employers' Profile

Of the 34 employers who responded to the survey, the major types of organizations represented were manufacturing (20.5 percent), education (17.6 percent), and medical (14.7 percent). However, the remaining respondents represent fourteen other types of organizations.

Almost half (45.5 percent) of the employer respondents were in small offices, ranging from 1 to 10 employees, and just under a third (30.3 percent) of them were in offices with 11 to 50 employees.

Employers' Perceptions of Graduates/Curriculum

Performance. When asked to rate their employees who were graduates of the Office Management Technology program on seven criteria with a scale ranging from one (very poor) to five (excellent), the employers gave the following mean ratings shown in Table 6.

Table 6
Employers' Mean Ratings of Graduates' Performance

Criteria	Mean
Job Related Conceptual Knowledge	4.35
Job Related Technical Knowledge	4.35
Attitude Toward Work (Professionalism)	4.44
Quality of Work	4.53
Oral and Written Communication Skills	4.24
Interpersonal/Human Relations Skills	4.21
Overall Job Preparation	4.36

Preparedness. When asked to identify the areas in which graduates were best prepared, the most frequent employer response was **Technical Knowledge**, especially computer skills, followed by **Attitude/Human Relations/Interpersonal Skills**. Tied at the third level of frequency was **Organization Skills** and **Communication Skills**.

Employer respondents identified about eight areas in which graduates could have used additional preparation. The most frequently identified areas were **Oral and Written Communication Skills** and **Business/Financial Concepts.**

Curriculum Suggestions. Employer suggestions for improvement of the curriculum fall into five areas of study. Additional interpersonal and managerial skills were the two most frequently stated suggestions. The other areas were computer skills, business related knowledge, and internships.

Important Areas of Study. According to the responding employers the most important areas of study in the curriculum should be broad-based skills in **Computers/Office Technology** (29), **Attitude/Human Relations/Interpersonal Skills** (16), **Oral and Written Communication Skills** (15).

Shorthand Perceptions. Over half (51.7 percent) of the employer respondents thought that **shorthand should be taught in the Office Management Technology curriculum**. However, only 9.1 percent of these employer respondents indicated that shorthand was a **job requirement** for any of their current office positions. When asked if they would **prefer to hire a prospective employee with shorthand skills** over one without it, all other qualifications being equal, the respondents were almost evenly

divided with 51.6 percent indicating No and 48.4 percent indicating Yes.

Employers' Hiring Needs/Preferences

Over half, 53.3 percent, of the employers indicated they anticipated hiring additional or replacement employees in Office Management Technology positions in the next three to five years.

All employer respondents except one (96.8 percent) indicated that based on their current experience they would hire another graduate of the Office Management Technology program when a position opened.

Conclusions

Graduate Occupational Profile

The typical graduate of the Office Management Technology program can be described with the following occupational profile:

* Is female
* Received her current position after receiving a degree
* Is currently employed in an office-related position--most likely as a secretary
* Has major job responsibilities that deal with interpersonal communications and specific technical skills
* Uses office equipment such as telephone, facsimile, calculator, and electronic typewriter
* Uses a personal computer on the job, probably an IBM standalone
* Uses word processing more than any other computer application, probably WordPerfect software, followed by spreadsheet software, usually Lotus 1-2-3
* Has been promoted once
* Receives annual income in $15,000 - $19,999 range
* Seldom attends a professional development seminar/workshop, but is more likely to do so than take college courses
* Is not a member of a professional organization
* Believes interpersonal communication and computer skills should be most important areas of study in the curriculum
* Wishes she would have received even more computer training than she did
* Is well satisfied with the Office Management Technology program (curriculum, instruction, and equipment) and would recommend it to others
* Is employed in a small office of a manufacturing, education, or medical organization
* Is perceived by her employer as having good to excellent preparation for, and performance on, the job

Employers' Profile

The data from the employers' survey projects the following profile for the typical employer of Office Management Technology graduates:

* Located in northeast Ohio, mostly communities served by Kent State regional campuses
* Engaged in manufacturing, education, or medical fields
* Has small office staff, usually ten or fewer
* Anticipates additional office positions to be available in next three to five years
* Perceives graduate as having good to excellent preparation for, and performance on, the job
* Would hire another Office Management Technology graduate to fill future positions, based on success of current graduate/employee
* Perceives graduate as being best prepared in technical knowledge, especially computers, but could have been better prepared in some other areas
* Believes shorthand should be in the Office Management Technology curriculum but would not always prefer hiring someone with the skill over one without it since most job descriptions in that office do not require the skill
* Believes most important areas of study in the curriculum should be computers/office technology, interpersonal skills, and communication skills

Curriculum Implications

Based on the input provided by graduates and employers, the following recommendations are made for the Office Management Technology curriculum:

1. Continue to emphasize the following content in the curriculum:

   * Letter, memo, and report writing
   * Written and oral communication within all classes
   * Good typewriting skill
   * Skills in shorthand and filing
   * Records management, office management, business management, office procedures, accounting, and math
   * Require shorthand in appropriate options

2. Consider the following changes to the curriculum:

   * Increase computer application experiences within the program to include a variety of applications; i.e., word processing, spreadsheets, database management, desktop publishing, accounting, and DOS.
   * Require an additional accounting or business related course.

* Provide opportunities for students to learn about different sizes and types of offices through visits and/or speakers representative of these types of businesses.
* Provide experiences with medical/legal documents and procedures within existing or new courses.
* Require an existing course or develop a new course in interpersonal relations with emphasis on dealing with different types of people on the phone or in person. Professional etiquette, public speaking, and interviewing could be included.
* Encourage or require students who have had no work experience to participate in an internship.
* Include more information, discussion, and exercises on stress and time management within courses.
* Include more thorough instruction on changing ribbons, inserting paper, and care of equipment when teaching the operation of any equipment.

Relationship of Employee Perceptions of Work and Adherence/Nonadherence to Protestant Work Ethic and Contemporary Work Values

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Abstract

This research relates employee perception of work to work values held. Multivariate analyses were conducted on data collected from 688 participants to relate their accepted definition of work and adherence or nonadherence to the Protestant Work Ethic and contemporary work values. Findings indicate that one's view of work can be a valid indicator of work values held. This information can be translated into behavioral characteristics employees are likely to exhibit.

The American business environment has experienced major change over the past two decades--a movement toward an information society, shifts in employment ratios from blue-collar to white-collar employment, and an increasing emphasis on computerized tools in completing day-to-day work. Many social scientists believe the interaction of these economic, technological, and demographic factors is resulting in a work force possessing contemporary work values much different from the Protestant Work Ethic values of the past (Li-Ping Tang, 1989). This study (1) reviews research that identifies differences between Protestant Work Ethic and contemporary work values; (2) relates employees' definitions of work to their work values; and (3) provides suggestions for recognizing and coping with different work values among employees in order to effect a positive change in behavior.

Background

An ethic by its very nature is a collection of values that is internally consistent and which both describes and guides the activities of individuals. Work values are the usefulness, importance, or general worth that an individual assigns to some behavior or conception of work (e.g., physical effort, length of time on task/job) and non-work activities (e.g., leisure, benefits, rewards). The extent to which an individual has been influenced by the Protestant Work Ethic very much impacts work behavior.

The Protestant Work Ethic (old or traditional work ethic) is an identifiable, established collection of values that is internally consistent and imposes obligations on individuals by the society adhering to this ethic. These values include preference for hard, physical labor, working regularly because it is one's obligation to society, having obedience and respect for authority, and rejecting leisure time. These principles of conduct and values are drawn from a rationalistic and religious philosophy about work and the importance of human activity associated with, or as a consequence of, work (Lauderman, 1990). On the other hand, the new, emerging, or changing values recognized by many as controlling today's work force are contemporary work values. These are a set of principles of conduct including less dependence on, and hence less commitment to, the physical aspects of labor or work, less obedience and respect for authority for the sake of discipline and power, and a desire for more leisure time. These principles are drawn from the new focus of work tasks made available through a highly technological and bureaucratic society which is more highly intent on getting the task completed and less dependent on hard, physical aspects of labor (Lauderman, 1990). Contemporary work values have appeared where individuals feel "right" about work in terms of individual choice and self-determination, rather than being made to feel "righteous" through work seen as the fulfillment of societal obligations. Whether these more contemporary values fit together to form a singular "contemporary work ethic" is not yet clear.

Many problems in the work environment may evolve from different work values held by managers and employees. Many difficulties arising in business environments on a daily basis appear to be symptoms of clashing values systems.

A 1982 AMA study concluded that values are at the core of one's personality. They influence the choices one makes, the people one trusts, the way in which one invests time and energy, and the appeals to which one responds. In turbulent times they can give a sense of direction amid conflicting views and demands (Schmidt and Posner, 1982).

Many employees are beginning to ask, What is "work"? Why work"? What values are associated with work? Also, what is the value of work? These questions are not new but are being asked publicly by more and more people. Much of the current loss of meaning, purpose, respect, self-worth, and pride in general by many of today's workers may stem from their inability to answer these questions effectively.

Thus a need exists to help individuals in society recognize and clarify for themselves the role and meaning of work, ethical behavior at work, and the nature of an appropriate American work ethic. Yet little is known today about whether today's workers and current and future members of the work force continue to adhere to the traditional Protestant Ethic and values or whether a more contemporary set of work values has begun to emerge and how they are different from Protestant Work Ethic values. Of importance to managers is whether these seemingly contrary value systems can coexist in the workplace and result in employees being both productive and satisfied.

Some researchers have assumed the traditional work ethic is still very much alive if management will develop it (Geber, 1987); Yankelovich, 1984). Others report that such dedication to work and the employer is a thing of the past (Gordon, 1984) and has been replaced by contemporary work values.

Workers may be involved in conscious or unconscious conflicts with other workers who are perceived to hold a different attitude toward work than their own. Furthermore, these differences in attitudes occur because individuals define work in a variety of ways.

Wayne (1989) identified and verified that internally consistent values make up the content of the contemporary work ethic through an extensive review of the literature. However, this research showed that a combination of contemporary and Protestant Work Ethic values emerge in contrast to a single clearly defined contemporary "work ethic." These combinations of values are in opposition to the singular Protestant Ethic to which a majority of persons at one time appeared to obediently adhere. This study led to the development of an instrument to measure adherence to work values. This instrument identified the characteristics and features of work values associated with the Protestant Ethic, contemporary work values, and those work values that may fit both. A Kuder-Richardson reliability coefficient of .97 established the reliability of this instrument. The study addressed the issue of whether clearly identifiable sets of work values are combined to form separate work ethics.

Major findings of the Wayne (1989) study are as follows:

1. Work values do exist that are unique to the Protestant Work Ethic and to contemporary work values.

2. Data do not support the prevalent view that work values or workers fall into one of two mutually exclusive sets of values--Protestant Work Ethic or contemporary work values.

3. At least four clearly identifiable sets of work values actually exist with significant discrimination among them: (a) Protestant Work Ethic values, (b) contemporary work values, (c) a combination of both Protestant Ethic and contemporary work values, and (d) a set of work values which represent weak adherence to both Protestant Ethic and contemporary work values.

The current study, a second phase of the Wayne study (1989), identifies the relationship of one's identified work values to the definition of work to which one consciously accepts and projects how one's definition of work can indicate job behavior.

Methodology

After a thorough review and summarization of existing literature that discusses Protestant Ethic and contemporary work values, the following definitions of "work" were finalized:

a. WORK IS only what I do where and when I am employed or on the job.

b. WORK IS any and all physical or manual labor whether it occurs as part of a task, job, occupation, hobby, leisure, or anywhere else.

c. WORK IS only those efforts, either physical or mental, necessary for producing something, even though a "tangible product" may not result (such as the rendering of a service.)

d. WORK IS the continuous and prolonged mental involvement of a challenging nature (as opposed to routine thought processes) regardless of whether a specific task is identified.

e. WORK IS any and all activity which is associated with non-income producing tasks, other people, or non-human objects (such as pet care, home repair, or gardening).

f. OTHER (please define briefly what work means to you should the categories "A.-E." above not apply.

The 688 participants in the study (388 college of business students and 300 white-collar workers representing various occupations and occupational levels) chose the definition of work with which they most agreed and completed an instrument which measured their adherence or nonadherence to Protestant Work Ethic and contemporary work values. Data from 670 participants were useable and analyzed collectively; no analysis was conducted to compare the two groups.

Multivariate analyses were performed relating the definition of work to adherence to Protestant Work Ethic and contemporary work values. The following null hypothesis was formulated to test for significant differences (.05 level of significance) in adherence or nonadherence to both sets of work values scales with regard to the independent variable "choice of work definition." Null Hypothesis: There are no significant differences in adher-

ence or nonadherence to both sets of work values when the choice of work definition (based on responses to the definitions of work which precede the statements in the instrument) of the respondents is used as the independent variable.

Results

Table 1 shows the results of multivariate analysis for all respondents with regard to choice of work definition. The values of F are statistically significant at the .05 level of significance for both the Protestant Ethic and contemporary work values scales.

Table 1
Univariate F-Tests for all Respondents for Both Sets of Work Values by Choice of Work Definitions*

Variable	HSS**	ESS***	HMS	EMS	D.F.	F-Value	Sign. of F
Cont.	4.943	190.603	.989	.287	5,664	3.444	.004
Prot.	4.906	199.875	.981	.301	5,664	3.260	.006

* N = 670
** Hypothesis Sum of Squares
*** Error Sum of Squares

Because statistically significant differences exist for all respondents on both sets of work values with regard to choice of work definition, the hypothesis was rejected.

The mean scores for the work definition variables on the contemporary work values scale are presented in Table 2.

Table 2
Mean Scores and Standard Deviations for all Respondents for Both Sets of Work Values by Choice of Work Definition

Variable	N (n=670)	Mean Score	Standard Deviation
Contemporary			
Work Def 1	75	2.502*	.483
Work Def 2	116	2.510*	.572
Work Def 3	298	2.373	.518
Work Def 4	127	2.272	.546
Work Def 5	9	2.158	.536
Work Def 6	45	2.371	.608
Protestant			
Work Def 1	75	3.106*	.558
Work Def 2	116	2.914	.537
Work Def 3	298	2.961*	.518
Work Def 4	127	2.857	.619
Work Def 5	9	2.497	.620
Work Def 6	45	2.940*	.535

*p < .05

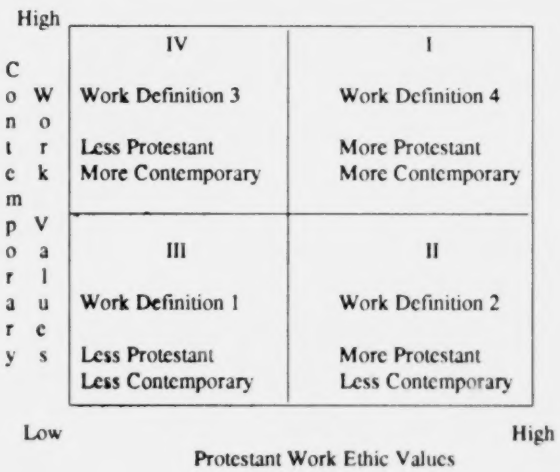
The use of the t-test indicated that significant differences do exist in adherence or nonadherence for individuals who chose work definitions 1 and 2 and those who chose the other work definitions. Those individuals choosing 1 and 2 adhere less to contemporary work values than individuals who chose other work definitions.

A similar inspection of t-values and observations of the mean scores for the work definition variables on the Protestant Ethic work values scale revealed differences exist in adherence or nonadherence for individuals who chose work definitions 1, 3, and 6. These individuals adhere less to Protestant Ethic work values than individuals who selected other definitions of work.

Discussion

Figure 1 displays a grid that the authors developed after relating the independent variable "choice of work definition" to adherence or nonadherence to Protestant Ethic and contemporary work values.

Figure 1
Relationship Among Perception of Work and Adherence or Nonadherence to Protestant Work Ethic and Contemporary Work Values



The selected definition of work by the participants of the study corresponds very closely to the measured adherence and nonadherence to Protestant Work Ethic and contemporary work values. This finding indicates that one's view of work can be a valid indicator of work values. These values can then be translated into behavioral characteristics the employee is likely to exhibit. (Work definition 5 was not considered a relevant factor in the grid analysis since only 9 respondents selected the option; likewise, work definition 6 was not considered since only 45 respondents selected it. No consensus could be reached regarding what work means to these individuals.)

Quadrant III: Work Definition 1

> WORK IS only what I do where and when I am employed or on the job.

Individuals falling within this quadrant have less adherence to both work ethics. This is a position of low motivation--at work and in life in general. Individuals in this category have low concern for work, even as a means to leisure enjoyment; they are floaters in life.

Quadrant II: Work Definition 2

> WORK IS any and all physical or manual labor whether it occurs as part of a task, job, occupation, hobby, leisure, or anywhere else.

Individuals falling into this quadrant are motivated by work itself, although the work does not have to be meaningful. Mental rewards and leisure time are less important, if important at all. The concept of self-fulfillment is of lesser importance. The tangible output of work--whether on or off the job--is important.

Quadrant IV: Work Definition 3

> WORK IS only those efforts, either physical or mental, necessary for producing something, even though a "tangible product" may not result (such as the rendering of a service.)

Individuals falling into this quadrant are motivated to work in order to enjoy its rewards--availability of leisure activities and time. The term "work" is associated with the job--it is necessary for output. Yet work itself is not motivating.

Quadrant I: Work Definition 4

> WORK IS the continuous and prolonged mental involvement of a challenging nature (as opposed to routine thought processes) regardless of whether a specific task is identified.

Individuals falling into this quadrant are motivated by work itself, yet the work needs to be challenging and rewarding for long-term commitment to the job and the firm. Emphasis is on planning for (balancing) work and leisure.

Summary and Recommendations

Adherence to both the Protestant Work Ethic and contemporary work values does exist in today's workforce; the two systems of values exist independently of one another, and each is accepted by individuals in differing degrees. However, each employee does fall into one of four categories that indicate the degree of adherence or nonadherence to Protestant Work Ethic and contemporary work values: (1) more Protestant, more contemporary; (2) more Protestant, less contemporary; (3) less Protestant, more contemporary; (4) less Protestant, less contemporary. This study indicates that one's adherence or nonadherence to the values is indicated by the definition of work accepted.

Employees working in environments which do not coincide with their perceived work values can lead to high levels of conflict on the job and in their private lives and ultimately may be translated into low motivation and morale, decreased productivity, and ineffective communication. Therefore, to avoid unnecessary conflict, managers should determine subordinates' work values by determining the definition of work accepted and use this information in such actions as the following: (1) matching employees as carefully as possible with appropriate jobs, job designs, and work goals; (2) designing work teams; and (3) structuring benefits plans to match workers' value systems.

In addition, employees should be made aware of the impact of value systems on employee actions. The importance of work values in the firm and their impact on employee communication and productivity justifies training sessions specifically designed to help employees recognize, understand, and cope with the different work value systems of others. For example, they should understand that various degrees of conflict among individuals of differing value systems do exist and is to be expected. With this understanding, they should be more willing to participate actively in conflict resolution to the benefit of self and the organization.

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A Research Agenda for Studying Technologically Mediated Instructional Strategies in Business and Education

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Abstract

The study reported (1) a research agenda identifying variables to study the effectiveness of technologically-mediated instructional strategies (TMIS); (2) a contingency model to help educators and trainers make informed decisions regarding the most effective TMIS to use under various contingencies; and (3) research questions and methods to provide direction for research into the effective use of TMIS in business and education. Six factors containing twenty-seven variables were identified for the research agenda. Also provided is the contingency model format, over fifty research questions and direction on research methods relevant to the research agenda.

Trends in educational settings have encouraged trainers and educators to implement such complex technologically mediated instructional strategies (TMIS) as interactive videodisc, multimedia technologies, and distance learning. As a result, decision makers must sort through conflicting claims about the effectiveness of a bewildering array of instructional strategies.

In school settings, much of the pressure to implement TMIS is related to a paradigm shift underpinning educational reform movements. Daggett and Branigan (1987) expressed this shift:

> . . . the teacher standing in front of the class imparting knowledge is obsolete and inhibits innovation that is so typical of today's world . . . teachers as well as students must develop an ability to adapt, to modify, to learn, to relearn, and to adjust to changing circumstances . . . The role of teachers must become that of a learning consultant, facilitator, and advisor . . . (p. 14)

As expressed by DeBloois, this paradigm shift is often closely interrelated with the implementation of TMIS:

> . . . educators may seek new solutions to educational challenges . . . and they cannot continue to use time-worn methods. They will find ways to carry out the task of transferring an ever-increasing body of knowledge to new generations of learners. . . within diminishing budgets . . . Individuals who already see this future are turning to technology (p. 2).

Similar movements connected with TMIS are transforming training in business and industry. Leading organizations are investing heavily in TMIS (Knirk & Christinaz, 1990; Geber, 1990); for example, several major companies predict that 50 to 60 percent of their training will be delivered outside of conventional classrooms using TMIS by the turn of the century (Geber, 1990). The evolution to student-directed learning systems is already taking place in Fortune 500 companies (Lusterman, 1985) and reflects a major paradigm shift that will use technology as it has never been used before. In this new paradigm, the learner is at the center of the educational process with the ability to request training on demand at the work area using TMIS (Geber, 1990).

A number of reasons have been cited to explain the upswing in TMIS implementation in adult training sites. Among these reasons are need for flexibility in time and location of instruction; competitive pressures; diminished time available for training; the pressure to educate more students for less money; and the availability of more sophisticated TMIS (Geber, 1990; Lusterman, 1985). For these reasons, some predict that in the near future, trainers will have to justify a decision to not deliver training using TMIS (Geber, 1990).

Definitions

In order to provide a better understanding of how TMIS fits into the broader concepts of educational and instructional technology, each of these terms are defined here. For the purposes of this paper, "instructional technology" is defined as:

> . . . a systematic way of designing, carrying out, and evaluating the total process of learning and teaching in terms of specific objectives, based on research in human learning and communication and employing a combination of human and nonhuman resources to bring about more effective instruction (Commission on Instructional Technology, 1970, p. 21)

"Instructional technology," which emphasizes the **product** necessary to produce learning, is a subset of "educational technology," which emphasizes the **process** of producing human learning (Meierhenry, 1984, pp. 9-10). TMIS is defined as the nonhuman resource component of instructional technology.

Need for the Study

TMIS selection has been recognized as an integral part of the total instructional development process (Anderson, 1983; Gagne, Briggs & Wager, 1988; Briggs & Wager, 1981; Boucher, Gottlieb & Marganlander, 1973; and Sleeman, Cobun & Rockwell, 1979). However, because the selection of effective TMIS is based on a combination of interrlated factors, the process is complex and difficult (Anderson, 1983).

Several researchers have recognized the dynamic context of the learning environment and have identified a need to study how TMIS fits into the overall instructional context (Brody, 1984; Chao, Legree, Gillis & Sanders, 1990). Although research studies have investigated the relationship among selected TMIS and contingency factors, there is a need to piece the research findings together and study the effectiveness of the array of TMIS in a holistic manner (Brody, 1984; Chao, Legree, Gillis & Sanders, 1990). The results of this model can then be used by educators and trainers to determine if TMIS is effective in relation to a complex array of factors.

In addition, Hannafin (1985) identified the need for an adequate research agenda to provide other researchers direction into the instructional dimensions of various TMIS.

To meet these needs, the research agenda proposed within this study describes a model which identifies TMIS factors and provides direction for other researchers to study the complex relationships among the factors. In addition, this study provides direction for decision makers to make more informed decisions.

Research Purpose

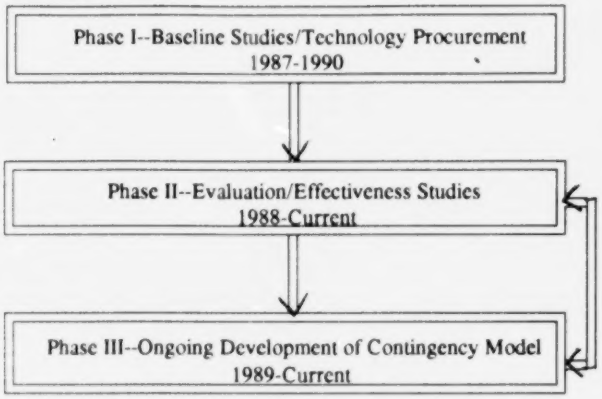
The purpose of the research is to describe: (1) a research agenda identifying relevant variables for studying the effectiveness of TMIS; (2) a contingency model to help educators and trainers make informed decisions regarding the most effective TMIS to use under various contingencies; (3) relevant research questions and methods to provide direction for research into the effective use of TMIS in business and educational environments.

Research Methods

Since 1987, a team of researchers has systematically developed a contingency-based decision-making model based on an exhaustive literature review. The three-phased study, illustrated in Figure 1, guided the development of the contingency model.

During Phase I, a national survey of educators and trainers was conducted; a model TMIS laboratory was installed; a literature review was conducted; and research questions and variables were identified. During Phase II, experimental, observational, survey and qualitative studies were conducted to investigate contingency relationships and to design the contingency model. Phase III continues to study the relationship among the variables within the continually-evolving contingency model.

Figure 1
Research Phases



Research Agenda

The research agenda, illustrated in Figure 2, depicts an organized format for conducting the research. The agenda, designed after reviewing over 100 research studies, illustrates relevant factors and research methods. Six major factors were identified (environment, learner, instructor, learning process, content, and cost/benefit), and a number of variables were identified within each factor. In order to determine the effectiveness of a TMIS, the media is examined in relation to each of the relevant variables, individually as well as holistically.

Environment

This factor examines the internal and external environmental conditions which may influence the effectiveness of the delivery medium. For example, the following variables might be studied for various TMIS: instructional setting; group communication patterns or dynamics; institutional goals; or organizational climate.

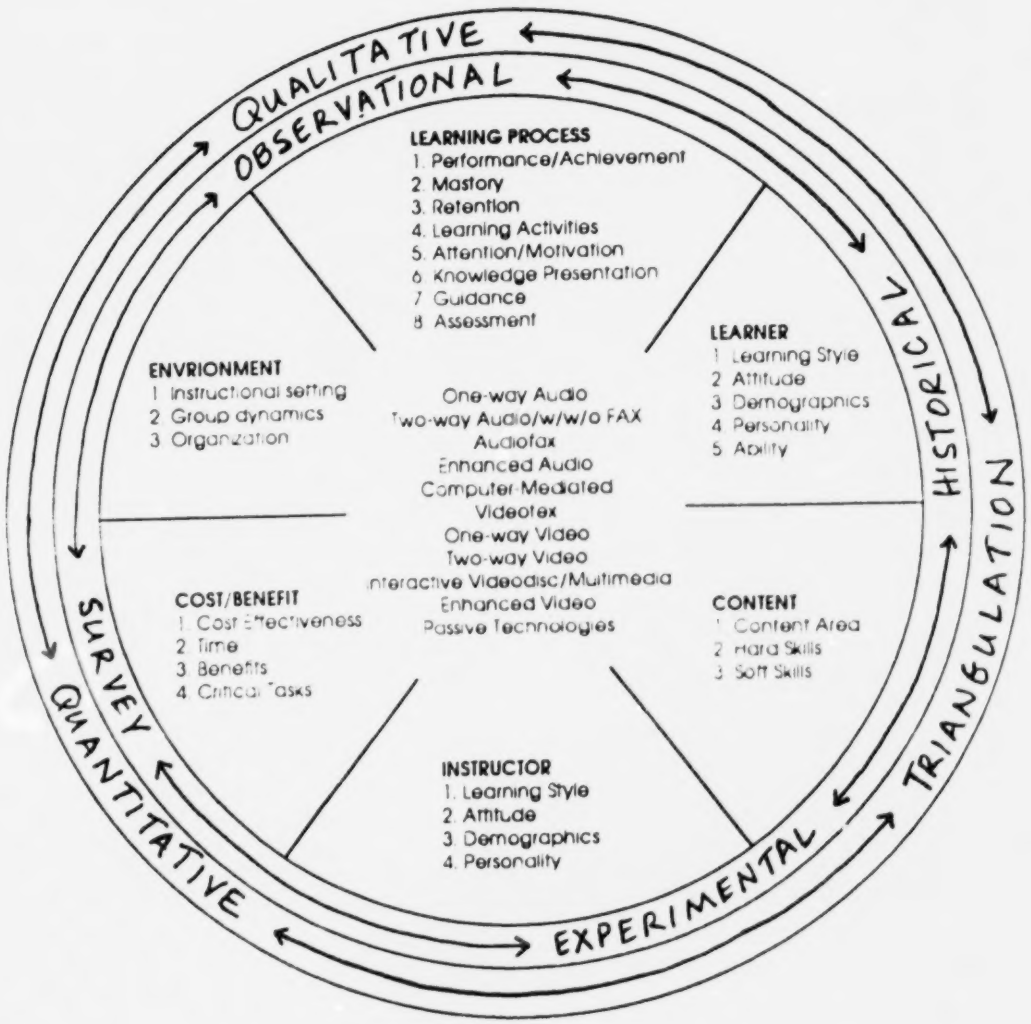
Learner

In judging the effectiveness of an instructional strategy, the learner is of vital concern. The delivery system is the tool which enables the learner to "learn." The performance of the learner is under scrutiny and the researcher must determine how performance and/or achievement level are affected. Other relevant learner variables might include attitude; personality profile; cognitive style; or various demographic variables.

Instructor

Many of the same variables relevant to the assessment of the learner are also of concern when examining the instructor and the effectiveness of the TMIS. Relevant instructor variables might include the cognitive style and/or personality profile of the instructor; attitude toward TMIS; and demographic variables.

Figure 2
TMIS Research Agenda



Learning process

Closely aligned with the learner and the instructor are variables which influence the learning process. Such variables might include the level of mastery attained through the use of a TMIS; the effect of TMIS on student performance; the accommodation of the learning process at the different levels of Bloom's taxonomy; short-term and long-term retention rates of learners; motivational factors, learning activities, knowledge presentation; and learner assessment.

Content

The effect of TMIS on learner performance given the content and/or skills to be learned is another important factor. An investigation into the effectiveness of the medium on teaching "hard" or "soft" content would facilitate an instructor in deciding which TMIS to use. "Hard" content is that which can be measured by objective, competency-based evaluations. In contrast, "soft" content is more difficult to measure for these are the skills that involve a higher-level assimilation of knowledge and synthesis of information.

Figure 3
TMIS Contingency Model With Selected Findings

Contingency Factors and Variables	TMIS Type: Audio	Interactive video/multimedia (IVD)	Video	Computer assisted/managed instruc.	Distance
Learning Process					
Achievement		middle school achievement levels higher in math using IVD compared with conventional (EXP#46)[a]		elementary school achievements gains were 1-8 mos. compared with with conventional (EXP#25)	
Mastery		coached managers demonstrated sig. greater ability to transfer goal setting behavior to job (EXP #14)		unclear transfer of training with simulators (MA #156)	
Retention[b]					
Learning Activities					
Attention/Motivation					
Knowledge/Presentation					
Guidance					
Assessment					
Learner					
Learning Style					
Learning ability/special needs					
Attitude					
Demographics					
Personality					
Content					
Content area					
Hard Skills					
Soft Skills					
Instructor					
Learning Style					
Attitude					
Demographics					
Personality					
Cost/Benefit					
Cost effectiveness					
Time					
Benefit					
Critical tasks					
Environment					
Instructionalsetting					
Group dynamics					
Organizational factors					

[a] Capital letters (EXP, MA) refers to type of study, i.e., EXP = experiment; MA = metaanalysis; # refers to a cross indexed number for the study which provides the complete citation.

[b] Each variable has summary of pertinent research similar to those described for achievement and mastery variables; space limits inclusion of all results in this report.

Cost/Benefit

The cost/benefit factor is of particular concern to educators and trainers. Implementing TMIS often involves an initial expensive investment. A relevant question might be to determine if that cost is offset by the benefits derived from the system over time. To determine the answer to this question, researchers must examine all the critical tasks involved in using the system and judge the effectiveness of that particular TMIS. Cost/benefit assessments often consider time-saving benefits as well as the advantages and disadvantages of the TMIS for the situation.

As illustrated in the outer wheels of the research agenda model in Figure 2, research tools used to determine the effectiveness of TMIS are diverse and depend upon the objectives of the study. The factors, variables and relationships presented in this research agenda lend themselves to various forms of qualitative, quantitative and triangulation methods and more than one method might be appropriately employed to study similar factors.

Contingency Model

Using the factors and variables identified for the research agenda for guidance, relevant findings from published and unpublished sources are placed within the contingency model. The purpose of the contingency model is to provide practical guidance for decision makers to make informed decisions regarding the selection of appropriate TMIS for particular situations.

Figure 3 illustrates the outline of the contingency model incorporating the research agenda factors. To give the reader some sense of the type of findings reported in the complete model, partial findings are reported in Figure 3. Space limitations do not allow the inclusion of all studies reviewed; however, complete results are reported elsewhere (Kizzier, 1992).

Direction for Further Research

To continue the development of the contingency model, additional studies need to be conducted. The purpose of this portion of the paper is to provide direction on methods and research questions which have been identified in the literature as worthwhile and relevant.

Research Methods

Several approaches have been used by researchers to study the effectiveness of TMIS. For example, by focusing on the intellectual processes tapped by TMIS, cognitive researchers study how and why TMIS affects the learner and the learning process. Other studies describe how TMIS is used by individuals or groups of learners. Finally, experimental studies compare learners using TMIS with a variety of control groups (U. S. Congress, Office of Technology Assessment, 1988).

A number of criticisms commonly surface when TMIS effectiveness studies are reviewed. One important criticism is that researchers ask the wrong question. For example, "Which TMIS is the best?" is the "wrong" question to ask because the media itself does not influence instructional effectiveness (Clark, 1983a, 1983b); rather, a variety of variables influence effectiveness, as illustrated within the research agenda in Figure 2.

TMIS comparison studies, in particular those which use experimental or quasi-experimental methods, have been criticized on several grounds. For example, in some comparison studies, TMIS treatments were supplementary while control treatments were not, providing TMIS groups with more instructional time. Other flaws reported included non-random assignment; inadequate controls; disproportionate attrition from experimental groups; incommensurable content; differences in relevant teacher attributes (U.S. Congress, Office of Technology Assessment, 1988); and the mitigating effect of curricular reform accompanying the use of TMIS (Clark, 1983, cited in Hasselbring, Sherwood, & Bransford, 1986; Reeves, 1986). In one study, 26 of 51 research reports were deemed unusable because of various methodology questions (Becker, 1987).

Although the significance of carefully controlled experimental methods is recognized, researchers should investigate the use of other methods for comparative studies, i.e., controlled correlation techniques, structured observations and multi-variate techniques. In addition naturalistic/case study methodologies and meta analyses can provide researchers additional insight into contingency relationships.

Research Questions

The research questions presented here were abstracted from the literature and in some cases re-conceptualized for relevance to the model. The questions provided here are not exhaustive or definitive; they are merely intended to provide direction for further research. Major factors within the research agenda are used to organize the research questions, using a coding system: learning process (LP), learner (L), content (C), instructor (I), cost/benefit (CB) and environment (E).

LP1 What is the relative uniqueness of and similarity among various TMIS across affective, cognitive, and pragmatic concerns (Hannafin, Phillips & Tripp, 1986)?

LP2 Are some kinds of instructional strategies more effective with some learners than with others (Mulder, 1992)?

LP3 How do various types of instructional design, teaching techniques and various kinds of interaction affect learner outcomes in distance education (U.S. Congress, Office of Technology Assessment, 1989)?

LP4 How do learning theory; instructional design; teaching models and curriculum development factors affect TMIS effectiveness (Sybouts, 1987)?

LP5 How can instructional effectiveness best be maximized considering the TMIS(s) used and learner characteristics (Brody, 1984)?

LP6 What effect does interactive feedback have on TMIS effectiveness (Kizzier, 1988)?

LP7 What is the relationship between interactive videodisc and instructional techniques (Brody, 1984)?

LP8 Considering content and/or type of learner, which of the instructional critical components (attention/motivation, presentation of knowledge, guidance, and assessment) can be more effectively provided by TMIS than by other instructional strategies (Gillingham & Guthrie, 1987)

LP9 What is the effect of interactive TMISs on cognitive processing (Kizzier, 1988)?

LP10 What constitutes effective teaching of (content area) and how can computers help provide this instruction? (Balajthy, 1987)?

LP11 In what ways can the computer improve on conventional classroom effectiveness and efficiency (Balajthy, 1987)?

LP12 Achievement gains using TMIS have been reported to be more impressive with elementary age youngsters than with college age; what relationship might this dynamic have to the [reportedly] more complex cognitive processing required by older students (Bajelsky, 1987, citing Kulik, Kulik and Cohen, 1980)?

LP13 What are the motivating factors of various TMIS? (Bajelsky, 1987, citing Clark, 1982)

LP14 Given that some studies have reported that enjoyable activities may be negatively related to learning productivity, what is the relationship between the enjoyment of learning from a TMIS and performance/achievement (Bajelsky, 1987, citing, Reinking, 1984; and citing Balajthy, Bacon, & Hasby, 1985)?

LP15 Do all learners benefit from the ability to control their own instruction using TMIS (Balajthy, 1987)?

LP16 What are the benefits of learner control over TMIS under various circumstances? For example, what is the effect of learner control on motivation, achievement, and the relationship to students' locus of control and meta-cognitive ability (Balajthy, citing Reinking and Schreiner, 1985; and citing Steinberg, 1977)?

LP17 What is the effect of TMIS on long-term retention (Hasselbring, Sherwood & Bransford, 1986)?

LP18 How do orienting activities affect the time it takes for learners to process information using various TMIS? (Hannafin, Phillips, & Tripp, 1986)?

LP19 How can learners of all ages be taught critical viewing and listening skills needed to effectively use TMIS (Ely, 1989)?

LP20 To what extent do various types of TMIS training transfer to the job site, specifically in simulator training (Geber, 1990).

E1 Given that increased social interaction is reported when learners use TMIS, how does this increased social interaction effect learning (Balajthy, 1987)?

E2 What affect does applying TMIS have on the organizational environment (Hasselbring, Sherwood & Bransford, 1986)?

E3 How can TMIS best be integrated into the total organizational structure to be most effective (Hasselbring, Sherwood & Bransford, 1986)?

E4 What are the political and social barriers, if any, to implementing distance learning internationally (U.S. Congress, Office of Technology Assessment, 1989)?

E5 Under what conditions are self-instructional systems using TMIS relevant and viable in training and development situations? (Mulder, 1992)?

E6 What psychological factors play a role in the relevance and viability of using TMIS in training and development situations (Mulder, 1992)?

CB1 What TMIS are especially relevant for adult learners to enhance on-the-job performance as well as generally benefit the organization (Mulder, 1992)?

CB2 How cost effective are newer applications of TMIS, such as interactive videodisc, distance education, and multimedia in various environments (U. S. Congress, Office of Technology Assessment, 1988)?

CB3 What criteria are best used to measure TMIS effectiveness in various situations (Bosco, 1986)?

CB4 How do various environments best justify the use of TMIS, using aspects of performance and cost/benefit techniques (Hasselbring, Sherwood, & Bransford, 1986)?

CB5 What is the cost effectiveness of distance education in K-12 settings (U. S. Congress, Office of Technology Assessment, 1989)?

CB6 What is the economic significance of investments in various TMIS (Mulder, 1992)?

CB7 Which cost and benefit indicators can be distinguished for training using TMIS (Mulder, 1992)?

CB8 Given that interactive videodisc is widely accepted in business and industry, but not in educational settings, to what extent can interactive videodisc be justified as a cost-effective teaching tool (Ely, 1989)?

L1 What effect does isolation have on the effectiveness of TMIS (U. S. Congress, Office of Technology Assessment, 1989))?

L2 What effect do the following have on the effectiveness of TMIS: the need to be self motivated, independent sense of success and feedback (U.S. Congress, Office of Technology Assessment, 1989))?

L3 Given that some studies reported significantly decreased learning improvement rates in longer studies, how does time relate to the achievement of users over longer time periods (U. S. Congress, Office of Technology Assessment, 1988; Kulik, Bangert and Williams, 1983)?

L4 Given that some evidence indicates that computers may be more effective with younger students and most TMIS research is conducted with older learners, what is the effectiveness of TMIS with younger students, particularly in reading research. (Balajthy, 1987, citing Kulik, Kulik & Cohen, 1980)?

L5 What is the effectiveness of TMIS with remedial students (Balajthy, 1987, citing Jamison, Supes and Wells, 1974)?

L6 Are there differences in the way various TMIS are used in educational settings, based on gender, i.e., need to

control the learning experience, inclination to explore, and length of time spent at task (Balajthy, 1987, citing Hawkins, 1984 and citing Schrock, Matthias, Vensel, & Anastasoff, 1985)?

I.7 What is the effect of TMIS on learner's attention and comprehension (Brody, 1984)?

I.8 What effect does the student having to take more responsibility for their learning in remote TMIS locations have on the student's ability to make transitions to other educational settings such as higher education (U.S. Congress, Office of Technology Assessment, 1989)?

I.9 Given that most distance education research to date has been conducted with well-motivated, disciplined, self-directed adult learners with good study skills, does distance education work equally well with all types and ages of learners, particularly with younger students with weaker study skills? (U.S. Congress, Office of Technology Assessment, 1989)?

I.10 Which, if any, face-to-face instructional functions can most effectively be replaced by distance education strategies? (Ely, 1989)?

C1 To be effective, does management training need to be presented in a different manner than technical skills training (Mulder, 1992)?

C2 How do the results of studies is other selected content areas compare with the results of studies completed in math and science (Kizzier, 1988)?

C3 What are the most powerful applications in various content areas (Kizzier, 1988)?

C4 Is TMIS more effective in content areas where sequence of instruction is important (Kizzier, 1988)?

C5 Is TMIS more effective when students must emit active responses to content (Kizzier, 1988)?

C6 Is TMIS more effective when perceiving spatial relationships is important (Kizzier, 1988)?

I1 What effect does the presence or absence of humans have on students' learning and on-task attention (Balajthy, 1987)?

Conclusions and Recommendations

Based on the research, the following conclusions are made:

1. Six factors appropriate for the TMIS research agenda and contingency model were identified: environment, learner, instructor, learning process, content, cost/benefit, and media.
2. Twenty-seven variables, which cluster within the six factors have been identified for the research agenda and contingency model.
3. The research agenda and contingency models provide researchers with an organized method and a conceptual map for conducting research to study the effectiveness of TMIS in business and educational environments.
4. Several research methods can be used for conducting TMIS effectiveness studies; however, some popular types of effectiveness studies have been criticized for valid reasons.
5. The literature generated a number of relevant unanswered research questions for each of the contingency factors.

The following recommendations are made:

1. Research should be conducted to further expand results within the contingency model. Such research could use the research questions generated within this report as a starting point.
2. The value of developing additional research agendas and models in business education and related areas should be identified; and if they are deemed valuable, additional topics should be identified.
3. With business educations' unique background which combines a knowledge of instructional technology, business concepts, learning theory, and involvement in the training and development field, business educators are well positioned to take a leadership role in studying the effectiveness of TMIS.
4. There is a need to place the research questions presented within this report in a priority order, using expert input from business, industry, and education.
5. There is a need to validate and further refine the variables, factors and format of the research and contingency models.

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Secretaries in the 90's: Which Skills Are Important?

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Abstract

Until the year 2000, employment of secretaries is expected to grow as fast or faster than the average for all occupations and in line with the general growth of the economy. Instruments were mailed to 100 randomly sampled personnel directors and secretaries of personnel directors to determine how they perceived the importance of 20 selected skills related to the secretarial position and to determine if there was significant difference in perception of importance between the two groups.

High perceptions of importance for keyboarding, personal computer skills, effective verbal communications, telephoning, human relations, and organizing time and work were reported by the two groups studied. Shorthand related skills were perceived to be the least important of the skills surveyed.

Introduction

According to the U.S. Department of Labor's Occupational Outlook Handbook, employment of secretaries through the year 2000, is expected to grow as fast or faster than the average for all occupations and in line with the general growth of the economy. Even with the productivity gains made possible by the microcomputer, a strong demand for secretaries will continue. In fact, many employers are complaining of the lack of first rate secretaries.(Labor)

To properly prepare secretarial students, educators should be aware of the perception of importance placed on secretarial skills by secretaries and personnel directors. Charles Prosser, a pioneer in occupational training, stated "The best reliable source of content for specific training in an occupation is in the experiences of masters of that occupation." (Prosser).

Purpose of Study

The purposes of this study were:

to determine how secretaries and personnel directors perceive the importance of 20 selected skills related to the secretarial position.

to determine if there are significant differences between secretaries' perception and personnel directors' perception of the 20 selected skills.

Procedures

Sample

A random sample of 100 Fortune 500 companies was selected for this study. The instruments were mailed to 100 personnel directors and 100 secretaries of personnel directors of the companies selected. Forty-seven usable instruments were returned by personnel directors and 39 usable instruments were returned by secretaries. Twenty-three of the instruments returned were from personnel directors and secretaries of the same company.

Instrumentation

An instrument was developed to determine the perception of importance of 20 different skills related to the secretarial position. Areas for related information were also included.

The instrument was developed by the three authors who teach in the field of Office Information Systems. The instrument was field tested by submitting it to five secretaries and five personnel directors. After several modifications, the instruments were mailed to the sample population.

Response to the 20 skills on the instrument were made on a five point Likert scale reflecting the perceived importance of the skill. A response of 1 represented that the skill was perceived to be not important, while a response of 5 indicated the perceived importance as very important.

Analysis of Data

For the purpose of analysis, the 20 skills were grouped into three related areas. Each skill was then analyzed by determining its mean for both the secretaries and personnel directors. A two-tailed t test score was used to determine significant difference between the 39 secretaries and 47 personnel directors at the .05 level. A t test for small, but equal samples was used to determine significant difference between the 23 secretaries and their personnel directors of the same company at the .05 level.

The first skills analyzed were those related to physical skills and/or activities of the secretary. (see Table 1) Both groups, secretaries and personnel directors, respectively, perceived the skills "Typing/keyboarding" and "Personal computer skills" as very important with means ranging from 4.6 to 4.8. Note-taking and transcribing related skills were perceived to be the lowest out of the 20 skills and had means of only 1.9 to 2.8. It is interesting to note however, that the secretaries perceived "note taking (speedwriting)" higher than the other three shorthand related skills.

Table 1

Skill	All Respondents		S & PD* of Same Business	
	S X (39) PD X (47)	t test[1]	S X (23) PD X (23)	t test[2]
Typing/keyboarding	4.8 4.6	1.31	4.7 4.6	.520
Transcribing (shorthand)	2.5 2.1	1.52	2.5 1.9	1.485
Transcribing (machine)	2.5 2.4	.138	2.4 2.6	-.329
Note taking (Gregg Shorthand)	2.4 2.4	.006	2.5 2.5	.823
Note taking Speedwriting	2.7 2.4	.985	2.8 2.2	1.54
Personal Computer Skills	4.6 4.6	-.039	4.4 4.5	-.362
Process/Distribute Mail	3.4 3.7	-1.18	3.4 3.5	-.407
Filing (manual)	3.6 3.9	-1.42	3.6 3.8	-.279
Filing(electric)	3.3 3.0	1.14	3.4 2.8	1.70
Copying & Duplicating	3.6 3.5	.070	3.5 3.2	.694

*S - Secretaries, PD - Personnel Directors
[1]5% level of significance - 1.9887
[2]5% level of significance - 2.0155

The second group of skills analyzed were those related to communications and human relations. (see Table 2) As with most studies, these skills were all perceived as being important to very important. "Effective communications skills (verbal)" and "Establishing and maintaining effective human relations" were both the highest rated skills of the study with means of 4.7 by both secretaries and personnel directors.

Table 2

Skill	All Respondents		S & PD* of Same Business	
	S X (39) PD X (47)	t test[1]	S X (23) PD X (23)	t test[2]
Effective written communications	4.0 4.5	-.103	4.3 4.4	-.698
Effective verbal communications	4.7 4.7	.855	4.7 4.6	1.32
Composing/editing	4.2 3.9	1.59	4.0 3.8	.680
Telephoning	4.6 4.6	.166	4.5 4.6	-.232
Greeting Visitors	4.3 4.2	.494	4.3 4.3	.188
Human Relations	4.7 4.7	.729	4.7 4.6	.876

*S - Secretaries, PD - Personnel Directors
[1]5% level of significance - 1.9887
[2]5% level of significance - 2.0155

The third group of skills analyzed were those general duties performed by secretaries. (see Table 3) In this group of skills, both secretaries and personnel directors perceived "Organizing time/work" as being very important with means ranging from 4.5 to 4.7.

On only one skill out the 20 surveyed, "Coordinating meetings/ scheduling appointments", was the mean of perceived importance significantly different between the two groups. The mean perception of the secretaries was in the very important range, 4.5, while the mean perception of the personnel directors was in the important range, 4.0.

Table 3

Skill	All Respondents		S & PD* of Same Business	
	S X (39) PD X (47)	t test[1]	S X (23) PD X (23)	t test[2]
Researching Info	3.8 3.4	1.617	3.6 3.2	1.33
Interpreting & Presenting Data	3.7 3.3	1.262	3.6 3.2	.967
Organizing time/ work	4.6 4.7	-1.027	4.5 4.6	-.279
Coordinating & Scheduling	4.5 4.0	2.243	4.4 4.2	.960

*S - Secretaries, PD - Personnel Directors
[1]5% level of significance - 1.9887
[2]5% level of significance - 2.0155

Related Data

Additionally, the respondents were asked to provide information related to (1) type of business, (2) number of employees in organization, (3) number of employees involved in office tasks, (4) type of office equipment utilized in daily office activities, and (5) software usage.

The analysis of related data provided the following information. Eighty-one percent of the businesses surveyed were manufacturing related. The average number of employees was 8,000 with 500 office workers.

In hardware usage, all respondents checked either Wordprocessor, Computer Terminal, or Personal Computer. The fax machine was reported used by 34 of the 39 secretaries and 35 of the 47 personnel directors. The typewriter and dictaphone were next in utilization.

The most often used application software packages were Lotus, Wordperfect 5.1, Microsoft Word, Pagemaker, and Dbase III+. (see Table 4)

Table 4

Software	Secretaries	Personnel Directors
Lotus	79%	77%
Wordperfect 5.1	64%	57%
Microsoft Word	31%	25%
Pagemaker	24%	6%
Dbase III+	3%	30%

Conclusions and Recommendations

The high perceptions of importance for keyboarding, personal computer skills, effective verbal communications, telephoning, human relations, and organizing time and work confirms that these skills were important to both the secretaries and those who are responsible for hiring secretaries, the personnel directors. Shorthand related skills were perceived to be the least important of the skills surveyed.

Secondary and post-secondary business educators should examine the instruction in secretarial related courses and incorporate the highest rated skills determined by the survey into the courses or curriculum. This will help increase the students' marketability and success on the job.

Shorthand related courses and instruction need to be evaluated yearly. With the decline in the number of shorthand courses being offered, perhaps speedwriting, which can be mastered in a shorter period of time, should be adopted by educators.

With the growth in demand for secretaries and rapid advancement in computer and office technology, the skills necessary for the secretarial position will continually evolve. Educators and employers should strive to maintain communications in order to prepare secretarial graduates to adapt to a rapidly changing world.

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Selected Characteristics Affecting the Collaborative Writing of Administrative Management Society Members in Iowa, Kansas, Missouri, and Nebraska

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Abstract

This study of business writers provides information about collaborative writing and examines characteristics affecting collaboration on the job. A 24-item survey was sent to the members of five Administrative Management Society chapters; three mailings produced 170 usable questionnaires. Data analysis involved a descriptive analysis, an examination of relationships between variables, and a content analysis.

Study highlights: collaborative writing is more common at the revising stage than the prewriting or drafting stages; as document length increased, the amount of collaboration also increased; and writers preferred working with one other person. Seven recommendations on teaching collaborative business writing are made.

Context of the Problem

Of the Fortune 500 business writers surveyed in 1970, 100% attributed their job advancement to communication skills (Bennett, 1971); this was confirmed by 97.7% of respondents to a similar questionnaire thirteen years later (Bennett & Olney, 1986).

These two studies are typical of the business communications research conducted over the last twenty years where emphasis has been on the written product (Andrews & Koester, 1979; Andrews & Sigband, 1984; Cox 1976; Faigley, et al. , 1981; Flatley, 1982; Harwood, 1983; Rader & Wunsch, 1980) ; the writers' perceptions of the importance of communications (Bennett, 1970; Bennett & Olney, 1986; Flatley, 1982; Hetherington, 1982; Hildebrandt, Bond, Miller & Swinyard, 1982; Lemley, 1983; Masolini, 1988; Sharplin, Sharplin & Birdsong, 1986; Swanson & Swanson, 1990; VanDyck, 1980); and business writers' perceptions of important writing qualities (Bataille, 1982; Kaisershot, 1987; Mullins, 1984; Stine & Skarzenski, 1979; Storms, 1983).

While these researchers primarily examined the final written product and factors affecting it, there is increasing interest in the writing process--the ways in which people actually produce written documents. In the 1980's an increasing number of writers began to look at this writing process (Ede & Lunsford, 1985 & 1986; Hyslop, 1990; Locker, 1989; Markel, 1988; Moran & Lunsford, 1984; Schamm, 1990). Part of this how-people-write investigation has to do with collaborative writing (people working together to produce a single document).

Purpose of Study and Research Questions

The purpose of this survey research was to examine selected characteristics affecting the collaborative writing practices of Administrative Management Society (AMS) members. The study was designed to provide descriptive information as well as to show relationships between these characteristics and collaboration.

The specific questions addressed by this study of business writers were:

1. What kinds of business products are written with other people?
2. How much of the working day is spent in collaborative writing activities?
3. In what ways do writers collaborate in writing tasks?
4. What are the attitudes regarding collaborative writing?
5. Does company size or writer's position in the company reflect differences in attitudes toward collaborative writing?
6. Does the writer's experience or training reflect differences in attitudes toward collaborative writing?
7. Does organization size affect the amount of collaboration?
8. Does the type of business affect the amount of collaboration?
9. Does the type of document affect the extent of collaboration?
10. Is there a relationship between the document type and one or more of the writing stages?

Theoretical Rationale and Significance of Study

In forming a conceptual framework for this study, collaborative learning with its emphasis on shared experiences provided a

useful prototype. Collaborative writing, like collaboration in learning, challenges the traditional concepts of individual authorship.

A review of the literature on collaborative writing in business revealed one particular study which emphasized the discrepancy between the way students are taught to write and the way they will write on the job (Ede and Lunsford, 1986). These researchers observed that business writing is ". . . most often a communal, consensual act, one that is essentially and naturally collaborative" (p. 76).

However, in the business communications classroom these is often little opportunity for group work; even when students do work in groups, their grade may still be based on individual writing assignments. Business communications teachers, therefore, need information on how writers work together: specifically, the writing stages at which people collaborate, the types of documents on which they collaborate and the way in which they collaborate. With this information, learning activities can be designed that will prepare future business writers for their writing roles in the business community.

Population and Instrumentation

A researcher-designed survey instrument consisting of 24 questions was administered to 439 AMS members. These individuals represented the total membership of five chapters in the states of Iowa, Kansas, Nebraska, and Missouri.

The questionnaire was divided into three sections: the first part provided information on collaborative writing practices and document types written in business; the second part ascertained the respondent's opinion on collaborative writing; and the third part provided information on the respondent and the employing company.

Procedures and Date Analysis

AMS chapter presidents were initially contacted by telephone requesting the use of their membership lists From these lists, individually addressed letters and envelopes were prepared and the questionnaires were coded for follow-up purposes.

Three mailings produced a 60% response rate. From this, a total of 170 usable questionnaires were available for data analysis and interpretation.

The data analysis involved three steps. Initially, a descriptive analysis was made of questionnaire items that used Likert-type scales or categorical responses. The Statistical Package for the Social Science X (SPSS-X) was used and the types of statistics included mean, median, mode, standard deviation, minimum, and maximum.

The next step was a content analysis of the responses to the two open-ended questionnaire items. To arrive at broad themes, all responses were listed and then collapsed into several recurrent themes. The final step in the data analysis was an examination of the relationship between the independent variables, selected characteristics, and the dependent variables, attitudes toward and amount of collaborative writing.

Demographics

The AMS respondents typically described themselves as holding mid- or top management positions within their company (81%): the word that appeared most frequently in their specific job titles was "manager." After their employing companies were grouped by business type, "Services" and "Finance, Insurance and Real Estate" accounted for 60% of the business types; the single most-mentioned business type was insurance, reported by 25% of the respondents.

Findings and Conclusions

The significant findings and conclusions are highlighted here.

The responses to questions about writing training revealed that respondents considered "Experience" as the primary way they had received their writing training (73%). "Company-sponsored writing courses" and "Other writing seminars or workshops" were the second and third most popular training methods, respectively. However, only 23% of the respondents indicated that group writing activities had been included as part of their training.

Additional questions about how well college business writing classes prepared them for working with other people yielded interesting results. Only 10% or 16 respondents indicated they had been prepared "Extremely well" by their college business writing course while 29% (45 respondents) reported they had been prepared "Not at all" for writing with other people.

Of the eight types of business documents identified in the survey, six were reported as "Sometimes," "Often," or "Always" written collaboratively by between 71 and 87% of the respondents. Generally, as the length or complexity of the document increased, so did the amount of collaboration. The document types respondents found most productive to work on with other people were "Procedures, users manuals or other detailed instructions." The document types respondents found least productive to work on collaboratively were "Letters" and "Memorandums."

Another area explored was the preferred group size when writing with other people; small groups were generally considered to be more efficient than working alone or with large groups. Other findings about the writing stages and writers' preferences included: Revising was the preferred stage of the writing process for collaboration; and of the five methods of collaboration listed on the questionnaire, the method most frequently used by 86% of the respondents was "One or more persons are asked to read a draft and make comments or suggestions."

Opinions about collaborative writing were usually positive. When asked whether they enjoyed collaborative writing, only 2 respondents said they "Never" enjoyed writing with others; 53% "Sometimes" enjoyed collaboration, while 32% of the respondents "Often" or "Always" enjoyed working with other people.

In response to the open-ended questions regarding the greatest advantage and disadvantage of working with other people, 48 AMS members reported the number and variety of ideas generated as the greatest advantage of collaboration. The amount of time collaboration takes was reported by 56 respondents as being the greatest disadvantage to working with other people.

Responses to the question "Do you feel collaborative writing produces better documents?" were also interesting. A little over half of the respondents reported that collaboration "Often" or "Always" produces better documents. No one felt that collaborative writing "Never" produced better documents.

Recommendations

The findings and conclusions of this study are significant for communications instructors and trainers involved in teaching business writing. Specific recommendations include

*incorporating cooperative learning techniques and group dynamics instruction in the business communications classroom;

*designing curriculum that emphasizes the writing process, the use of group activities, and appropriate document types;

*stressing with business communications students the importance of collaborative writing in the workplace; and

*encouraging additional quantitative and qualitative research on how writers work together on the job.

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A Status Report on the Internationalizing of Business Education Curricula in Wisconsin Secondary Schools

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Abstract

The purpose of this research was to contribute to future business education curricula by determining the initiatives needed to internationalize the curriculum. Wisconsin secondary business educators were surveyed to obtain responses to questions regarding concepts, courses, resources, and methodologies used to internationalize the curriculum. A review of related research indicated that the infusion of international concepts into curricula is a critical issue for business educators; and survey results indicated that, while many schools are becoming involved, many more need to make globalization a relevant part of curriculum.

Introduction

International (global) education gained national visibility more than ten years ago through the efforts of the President's Commission on Foreign Language and International Studies (Smith, 1990b). Since this national push in the early 1980s, global education concepts have been taught primarily in social studies and foreign language departments at the secondary level (Smith, 1990b). Several sources (Morrison and Morrison, 1991; Ramler, 1991; Wood, 1991) report that American schools have been slow to respond to the need to incorporate international concepts into the curricula.

Current reports indicate that the need for global education has continued to grow through the 1980s and may be imperative as the 21st century approaches. The importance of global education was stressed by President Bush in his 1990 State of the Union address. He established the six national educational goals to be met by the year 2000. One of these goals states that "every adult must be a skilled, literate worker and citizen, able to compete in a global economy" (Tifft, 1990, p. 54). This goal is an important imperative for American education since the focus of schools has been on teaching the "American way" (Morrison and Morrison, 1991, p. 140).

Americans need to understand that "in relation to other nations, the position of the United States has changed from that of dominance to the role of partner . . ." (Ramler, 1991, p. 45). Futurists construct an "ideascape" for education that suggests that "global and multicultural pressures will alter the way of life in the United States" (Benjamin, 1989, p. 8). "As the old order crumbles, the need to provide school experiences with a national and global dimension acquires great urgency" (Ramler, 1991, p. 44). Ramler believes that "our challenge is to prepare our students for a world where familiar geopolitical boundaries and economic assumptions are being replaced by new realities" (p. 44).

Geer (1988) states that "the importance of an internationally educated citizenry appears to be approaching the status of an educational given" (p. 372). Students need to be educated for the future (Keating and Byles, 1991); and, as Benjamin (1989) states, "education should move from past-oriented curriculums to past/present/future-oriented curriculums" (p. 9). Education has an obligation to "educate today's student for tomorrow's world--a world in which peoples and nations will be increasingly interconnected" (Knief, 1989, p. 43). Hagler and Abbott (1991) believe that "a global perspective must be established at all levels of education from kindergarten through graduate school" (p. 23), and Smith (1990a) states that "all subjects can and should be taught from a global perspective" (p. 35).

What are secondary business educators currently doing to respond to the need for internationalizing their curriculums? Business education, too, must set new initiatives and meet this need through its curriculum (Hagler and Abbott, 1991). Since business education courses stress economic understanding, use of new technologies, the integration of communication skills in all courses, an understanding of systems and procedures, and preparation for the workplace of today and tomorrow, it easily lends itself to "internationalizing" its curriculum. As Coligan (1991) states, "since the world is tied together through international business transactions, business education is an excellent place to develop students' global awareness" (p. 84).

Current research indicates that business educators nationwide have not set new initiatives to meet the challenge of internationalizing their curriculums. What are secondary business educa-

tors in Wisconsin currently doing to respond to the challenge of globalization?

Statement of the Problem

The problem of this study is to examine (1) how many business educators in Wisconsin are currently integrating international business concepts into their curriculums and (2) what concepts are taught, in which classes, and what types of resources are used to teach these concepts.

Purpose of the Study

The purpose of the study is to find answers to the two problems by obtaining information from Wisconsin secondary business educators through the use of a written survey instrument.

Significance of the Study

The study is significant because it:

1. provides business educators with an awareness of the importance of and the need for teaching international business concepts in business education courses at the secondary level.
2. informs business educators what international business concepts are currently being taught in business education courses in secondary schools in Wisconsin.
3. provides impetus for business educators to infuse international business concepts into their curriculums.
4. informs business educators about other departments in the high school that are most often involved in teaching international business concepts; thus, prompting departments to work collaboratively in teaching international business concepts at the secondary level.
5. provides a foundation for curriculum structuring by informing business educators of existing courses into which international business concepts may be integrated.
6. provides information concerning new courses which may be established to teach international business concepts at the secondary level.
7. provides teachers with suggested resources and methodologies which may be utilized in teaching international business education concepts at the secondary level.

Research Questions

For the purposes and intent of this study, the following questions will be addressed:

1. What is the level of involvement among Wisconsin business educators in integrating international business concepts into curriculums?
2. In what business courses are international business concepts taught in Wisconsin secondary schools?
3. What international business concepts are business educators emphasizing in their courses?
4. What resources are utilized in the teaching of international business concepts?
5. What methodologies are used to teach international business concepts?
6. In which other disciplines are international business concepts taught at the secondary level?

Research Design and Methodology

The procedures used to examine the degree to which international business concepts are being integrated into the business education curriculums of Wisconsin high schools are explained in this chapter. Included are research design, population selection, instrument design, data collection, and data analysis.

Research Design

The status report was designed as a survey of business education departments in Wisconsin secondary schools to examine the level of involvement of business educators in integrating international business concepts into their curriculums. Survey participants responded to questions regarding courses, content, resources, and methodologies used as vehicles to infuse international business concepts into business education curriculum.

Population

Because this study was designed to obtain facts from Wisconsin secondary business educators regarding the degree to which they have internationalized business education classes, the survey questionnaire was sent to all high schools, public and private, in the state of Wisconsin. A list of Wisconsin public high schools was acquired from the Department of Business Education and Office Administration at the University of Wisconsin, Whitewater. A list of Wisconsin private high schools was acquired from the Athletic Director of Milwaukee Lutheran High School. Four hundred seventy-five questionnaires were sent with a cover letter in November, 1991. Four hundred fifteen (87 percent) of the questionnaires were sent to public schools and sixty (13 percent) were sent to private high schools in Wisconsin. According to information gathered from the *WIAA Directory of Member Schools, 1991-1992* (1991) and *Directory of Member Schools, 1991-1992* (1991), 302 (64 percent) of the surveys

were sent to schools with fewer than 500, 97 (20 percent) to schools with 500 to 999 students, and 76 (16 percent) to schools with more than 1000 students.

Survey Instrument

Relevant issues regarding the internationalizing of business education were reviewed through current business education literature. In addition, the research committee reviewed the Sanchez (1991) thesis, "A National Study to Reexamine International Business Education Competencies for Secondary Education Curricula." Competencies selected from the Sanchez study provided the framework for the survey.

Sanchez classified 48 competencies into the following 11 categories:

State/Regional Profiles
World Profiles
Import and Export Basics
International Economics
International Marketing and Transportation
International Finance
Laws and Regulations
Communications
Entrepreneurship
Trade Documentation
Employability Skills

Because the Wisconsin study was designed to obtain information directly concerning the teaching of international business concepts, all but one of the Sanchez employability skills competencies were omitted. Of the remaining competencies related to international business only two (one from the state/regional profiles and one from the trade documentation competencies were omitted for purposes of this study. (See Appendix A.)

In order to determine the concepts and methods used by Wisconsin business educators in internationalizing curricula, pertinent aspects of business education were stated in checklist format. These included a list of courses, concepts, and resources. Additional checklists provided information regarding size of school, number of business education faculty, and other disciplines involved in teaching international business concepts. Provision was made for participants to record textbooks and special teaching strategies utilized in internationalizing business courses.

After the survey was formatted, Lorna Wong, an instructor in the Computer Center at the University of Wisconsin, Whitewater, reviewed it for ease of data analysis and made several recommendations, which were incorporated into the survey instrument.

A pretest was then conducted among business educators at several local high schools. In addition, the questionnaire was reviewed by English, foreign language, and social studies instructors at these same schools.

Data Collection

The business education department chairs of 475 high schools in Wisconsin were sent a copy of the pretested survey questionnaire in November, 1991, along with a cover letter. One hundred sixty-six responses were received by the end of December, 1991. In March, 1992, a follow-up mailing was sent to the 309 schools not responding to the first mailing. (A copy of the survey and cover letters may be found in Appendix B.) One hundred six additional responses were received in response to the second mailing. The total number of responses was 272. The rate of return was 57 percent.

Data Analysis

Data were analyzed according to:

1. The frequency of responses to each survey item.
2. The response rate of each item.
3. A ranking of international business concepts which are taught.
4. A comparison of the ranking of international business concepts taught by Wisconsin business educators with the ranking of competencies reported in the Sanchez study.

Information regarding textbooks and strategies utilized in teaching international business concepts was reported as provided by survey respondents.

Review of Related Research

> Global education has become increasingly important as the nations of the world have entered a global marketplace in which cross-cultural communication is essential to economic, political, and social survival. Students not only need to learn facts about other countries, but they also need to learn through experience how to relate and communicate effectively with people from other nations and how to work cooperatively toward common goals. (Pryor, 1992, p. 399)

The need for global education moves educators toward "a new way of thinking" (Wood, 1991, p. 13). Schools need to incorporate global education into the "framework" of their curricula (Wood, 1991, p. 13); the "deep structure" of a school must be "open, cosmopolitan, and international" (Ramler, 1991, p. 45). Administrators must "make a commitment to making global education an integral part of curriculum development" (DeKock and Craig, 1989, p. 48), and "students must develop an international perspective and international skills if they are to participate as successful and productive citizens on behalf of their separate nations in the global environment" (Ramler, 1991, p. 46).

In a 1989 report, the Business Round table pointed out that "many American companies have restructured in response to a changing world and increased global competition. In this dynamic environment, American elementary and secondary education must do the same" (Pipho, 1991, p. 582).

While there is no standard recipe for infusing a global curriculum into any particular school, the first principle reiterated time and again by experts in global education is that global education "be taught by all educators, at all grade levels, and in every subject" (Smith, 1990b, p. 10).

The business education curricula at all levels is fertile ground for teaching international concepts and theories (Carlock, 1991). "The intensified competition of the global marketplace offers great challenges and unique opportunities for business educators and our students" (Treichel, 1992, p. 2). The importance of infusing global concepts into business education curricula is specified in two mission statements, one developed in 1989 by the Policies Commission for Business and Economic Education (p. 5-6) and the second in 1992 by South-Western Publishing Company (p. 9). Both of these policy statements may be found in Appendix C.

Concepts

"Not all students need to be international experts, but all students must have a working knowledge of international issues and an understanding of world interdependence" (Hagler and Abbott, 1991, p. 24).

Various sources (Carlock, 1991; Hagler and Abbott, 1991; Labich, 1992; Sanchez, 1991) indicate that the following important global concepts and skills may be incorporated into the business education curriculum:

- a knowledge of and sensitivity to foreign customs and culture
- a basic understanding of international economics, geography, and trade
- a knowledge of foreign business procedures
- a familiarity with export documents, finance, and legal procedures
- cross-cultural communication skills
- adaptation-to-change skills
- critical-thinking skills
- decision-making skills
- human-relations skills
- information-management skills
- leadership skills
- problem-solving skills"

"Knowledges, skills, and attitudes concerning the international dimensions of business can be easily added to courses related to accounting, basic business, the keyboard, language, and marketing" (Scott, 1990b, p. 35).

Courses

"Innovative business educators can strengthen the relevancy of the secondary school curriculum by developing needed international knowledges, skills, and attitudes in all secondary school business courses" (Scott, 1990b, p. 35). To provide education and training with a global aspect, business educators need to infuse international concepts (Hedrick, 1991) into accounting-related courses, basic business-related courses, keyboarding/computer-related courses, marketing-related courses, and communication/language-related courses.

Accounting-related courses. Business is increasingly transacted on an international scale. People buy, sell, and invest around the world. Therefore, some understanding of international accounting is necessary to assess the financial positions of multinational businesses (Scott, 1991a).

Business teachers may incorporate such concepts and activities as reading and understanding the differences in international business statements, such as balance sheets and income statements (Scott, 1990a); studying foreign accounting systems and practices (Scott, 1990a); working with foreign currency conversions (Bloom, 1990); and creating a partnership with a local business involved in international trade (Pipho, 1990).

Basic business-related courses. As we have become "participants in a borderless global economy" (Wood, 1991, p. 10), there is a potential for great change in the structure of international business organizations (Coates, Jarratt, and Mahaffie, 1991). This means that business teachers will need to infuse global concepts into such courses as basic/general business, business principles and management, business law, finance, entrepreneurship, economics, and geography.

Business teachers may incorporate such global topics as why international trade occurs, how American companies conduct international trade, how international trade is financed, and how nations restrict and encourage international trade (Duff, 1991). Activities to accomplish this may include creating business/trade links with local businesses that import/export goods and services (Chartock, 1991); establishing economic geography studies (Scott, 1990b); developing interdisciplinary (social studies, foreign language, and business) courses or projects (Blockhus and Maxwell, 1991).

Keyboarding/computer-related courses. The strategic role of information technology in international business requires students to possess knowledge and skill in computer use, information retrieval (Labich, 19912), international business procedures (Hedrick, 1991), and formatting of documents (Winter, 1991), along with an ability to adapt to the many changes which take place in technology (Haynes, 1992).

Business educators may have an opportunity to include concepts and activities such as studying and preparing international docu-

ments (Winter, 1990), using materials on other countries and cultures for timed writings (Hagler and Abbott, 1991), preparing an itinerary for overseas business travel (Scott, 1990b), applying the metric system to document preparation (Scott, 1990b), and developing computer networks with schools in other countries (Boston, Chang, and Mukai, 1991).

Marketing-related courses. High school marketing courses offer another option for incorporating international content (Scott, 1990b). Innovative units related to consumer problems and issues (Hagler and Abbott, 1991), salesmanship, product/service distribution (Scott, 1990b), foreign markets (Bernardi, 1991), and analysis of foreign advertising and preparation of new advertising materials for use in a foreign country (Beistle, 1991) will make the marketing curriculum more relevant to today's international marketplace.

Communication/language-related courses. "While Americans have always lived in a diverse world, only recently have we begun to accept the challenge of responding more expansively and sensitively to what has been called the 'global village'" (Inman, Ownby, Perrault, and Rhea, 1991, p. 19). Perhaps the greatest challenge to business managers today is "to communicate effectively in an international arena" (Inman, et al., 1991, p. 19).

Some important concepts and skills which could be taught by business educators include non-verbal communication (Davis and Redmann, 1991) and written communications (Inman, et al., 1991), dictation/transcription practices (Scott, 1990b), and organizational communication (Inman, et al., 1991). Teachers could utilize foreign correspondence obtained from local businesses (Inman, et al., 1991), and could develop inter-disciplinary programs with foreign language departments in their schools (Blockhus and Maxwell, 1991).

Wood (1991) believes that "while all four skills--hearing, reading, speaking, and writing--will be important, emphasis will be on hearing and reading" (p. 13). Thus, it will be important for teachers to help students improve their listening skills and to have students discuss and interpret assigned readings (Davis and Redmann, 1991).

All business-related courses. International content can be infused into all existing business courses (Scott, 1990b). Some suggestions given by Davis and Redmann (1991) are student/team projects, role-playing/culture-shock projects, case studies, critical incidents, assignment/discussion of readings, guest speakers, sister-school relationships, traditional/electronic communication exercises, and audio-visual media presentations.

A few suggestions from various other readings are pen-pal relationships with classes in overseas schools (Bergman and Young, 1989; Boston, et al., 1991); experiencing various cultures through restaurants, museums, parades, art, music, movies, and drama (Chartock, 1989; Morrison and Morrison, 1991); student/ teacher exchanges (Budai, 1992; DeKock and Craig, 1989; Ferguson, 1990); and international study tours (DeKock and Craig, 1989; Scott, 1992).

A list of organizations which have experience in setting up sister-school programs and student exchanges may be found in Appendix D (Blockhus and Maxwell, 1991; Pryor, 1992).

Methodology

The realization that Americans must actively participate in the international marketplace is bringing about major changes in U.S. society (Scott, 1990b). To prepare students for the global marketplace, "business educators need to move immediately to incorporate international terminology and global economic theories into the curriculum" (Treichel, 1992, p. 2).

There are three basic strategies or techniques that business educators may employ to internationalize their curricula. The three approaches are: internationalization by infusion, internationalization by special courses, and internationalization by interdisciplinary programs.

Internationalization by infusion. This approach, as suggested by Scott (1990b), encourages business educators to add international material to their courses wherever it is relevant throughout the curriculum. It is a relatively simple way for business educators to internationalize the curricula. Business educators can easily infuse relevant international concepts into existing course material and classroom activities. Self-confidence with international topics grows as the teacher adds international concepts to more lessons, units, and courses.

Some disadvantages of this method may be that the teacher has limited knowledge and experience of international dimensions. Use of the method may be time consuming as there are few published materials, which requires the teacher to adapt resources to fit the curriculum. Unless international topics are clearly assigned to students, the infusion method may be implemented in a piecemeal fashion.

Hagler and Abbott (1991) believe that "this may be the only approach available to most business education programs" because of the "already crowded curriculum in most secondary schools" (p. 23).

Internationalization by special courses and programs. Scott (1990b) also suggests that a much less common but excellent way to internationalize the secondary school business curriculum is to offer specialized courses and programs." Such courses and programs provide students with in-depth preparation for the international marketplace by thoroughly developing necessary international knowledge, skills, and attitudes" (Scott, 1990b, p. 35).

Internationalization by special courses and programs is most effective in schools that are located in large metropolitan areas where impacts of international business are realized. Adequate

funding for innovative programs, cooperation and support of school administration, and properly prepared teachers may all hinder implementation by this method. "However, such challenges may be overcome so that specialized courses and programs can yield very positive outcomes" (Scott, 1990b, p. 35).

For business education departments considering specialized courses, Beistle (1991) suggests the following four courses: International Trade, International Trade Documentation, Entrepreneurship, and Advanced International Trade. Scott (1990b) also suggests that vocational block programs, such as tech prep, can be especially effective for international studies with course specializations.

Internationalization by interdisciplinary programs. This approach yields the same positive outcomes as inter- nationalization by special courses and programs with the added benefit of blending the expertise of foreign language, social studies, and business teachers (Scott, 1990b). While Smith (1991a) believes that this comprehensive approach is "central to education for the 21st century" (p. 35), the strategy maybe more difficult for schools and departments to implement because of staffing, scheduling, budgeting, administrative support, and business community support (DeKock and Craig, 1989).

Process by which internationalization is realized. Moore (1992) states that:

> The techniques or strategies for implementing these (curriculum) changes are best left to business educators themselves. From a business leader's perspective, whether this transformation is accomplished by infusion of material into current curriculums or by specialized programs is not the issue. The issue is that these changes must become a reality.
>
> The ideal content of such courses or programs has been debated by business educators and consultants and a range of basic competencies is emerging. These vary from basic technical skills dealing with documentation, tariffs, and currency exchange to more general understandings of foreign cultures. However, the relevance of individual curriculum options will vary according to the culture of each business. The specific content may be of less importance than creating within students an awareness and appreciation of the international marketplace and the challenges before us. (p. 20)

In order to internationalize the business education curriculum, business educators need to build a system of support. Hagler and Abbott (1991) state that "the question is not whether or when to build support for an international business program--the question is how" (p. 25). To help business educators gain support in changing to an international business education curriculum, Hagler and Abbott suggest the following guidelines:

1. Infuse intercultural components into all busness education classes to expand awareness and to reduce xenophobia (fear of foreigners).
2. Establish advisory committees at local, state, regional, and national levels. These committees should include persons who are knowledgeable in international education and international business.
3. Encourage business educators to become knowledgeable in international education by planning seminars, conferences, and conventions dealing with the topic.
4. Develop a refereed journal devoted to international topics to encourage researchers to become involved in the area.
5. Establish a clearinghouse for storing and disseminating information and publications on international business education to avoid duplication of effort.
6. Unite all interested business education groups into a consortium to build support, to coordinate efforts, and to guide the development of international business education.
7. Build support for an international business education program research, education, involvement, commitment, and leadership. (p. 24)

Resources and Materials

While a limited amount of specialized business education materials exist for teaching international business concepts (Beistle, 1991), a variety of other resources (educational and non-educational materials) are available for the business educator to utilize in internationalizing business courses. In selecting resource materials, the teacher should keep in mind the five characteristics of quality global education materials as outlined by Smith (1990b).

1. All educational materials should be factually accurate and devoid of racial and sexual stereo types. Quality global education materials must meet even higher standards. Cultural stereo types . . . need to be actively challenged.
2. While human diversity is an important part of our global heritage, there are also human commonalities which transcend specific cultural groups. Quality materials will include attention both to cultural diversity and to common human needs and values.
3. Global education programs focus on human interconnections. All global issues have local ramifications. Quality global materials make the link between the global and the local.

4. While the study of other nations, cultures, and global issues may have intrinsic merit, the purpose of global education is to prepare American youth for national citizenship in a global age. Global education materials should not be propagandist for any particular view for key specific causes. Quality materials incorporate a balanced approach to controversial issues and topics.

5. The world faces difficult challenges and simultaneously offers tremendous opportunities. Pessimistic and optimistic projections are both a part of good educational programs but perhaps the most important message is that the world is inherently an exciting place. Global education materials that are boring and uninteresting do not communicate this sense of excitement. (p. 80)

Quality global education materials selected by the teacher should connect with the students' own experiences and encourage the students to become actively involved in accepting the challenges of the marketplace (Ferguson, 1990). A listing of quality global education materials and resources which may be utilized by the business educator can be found in Appendix E (Bergman and Young, 1989; Hagler and Abbott, 1991; Smith 1990b). Additional resources would include periodicals, videos, films, newspapers, television programs, and speakers.

Research Findings

The results of a survey sent to business education departments in Wisconsin secondary schools address the six research questions of the study. Each question is addressed separately under the headings in this chapter.

Of the 475 surveys sent to Wisconsin high schools, 272 (57 percent) were returned: 248 (91 percent) were returned by public schools and 24 (9 percent) were returned by private schools. Of total respondents, 156 (57 percent) were schools of under 500 students, 66 (24 percent) were schools of 500 to 999 students, and 50 (18) percent) were schools of 1000 students or more. Two schools (1 percent) did not indicate school size.

Number of Wisconsin Business Educators Teaching International Concepts

Of the 272 schools responding to the survey, 109 (40 percent)indicated that something is being done to include international business concepts in one or more business education courses; 161 (59 percent) indicated that nothing was being done to internationalize business education curriculum. Two schools (1 percent) did not respond to this question.

Size of school had little effect on whether business education curriculum had been internationalized. Of the departments that have internationalized curriculum, over two-thirds have two or more teachers.

Business Courses in which International Concepts are Taught

"Yes" respondents to the survey checked whether international business concepts were incorporated into an entire course, into one or more units of a course, or into one or more lessons of a course. Table 1 identifies the courses which have been internationalized. Most instructors internationalize individual lessons rather than units or entire courses. The course internationalized by most instructors is Basic/General Business.

The average number of courses internationalized by schools responding to the survey is three, with the largest portion of responding schools having internationalized only one or two courses. A listing of the courses which have been internationalized by various Wisconsin high schools may be found in Appendix F.

International Concepts Emphasized in Business Courses

A checklist of 30 international business concepts recommended for secondary courses by educators and executives involved in international business were presented in the survey. "Yes" respondents checked those concepts which are taught in the business education curriculum. Table 2 shows the rank order of infusion of these concepts into Wisconsin business education curricula as well as the rank order of the same competencies from the Sanchez study.

The five concepts most frequently integrated into business education courses include: (1) understand different economic systems in the world, (2) understand reasons for exporting/importing, (3) understand the marketing concept, (4) understand how specific cultures impact business practice, and (5) evaluate personal entrepreneurship opportunities.

The competency ranked first by Sanchez--understanding major trade regions of the world--was ranked seventh by Wisconsin business educators. Three of the top five Sanchez competencies also ranked in the top five in the Wisconsin study. The four concepts given the lowest ranking by Wisconsin respondents also ranked among the lowest of the Sanchez competencies.

While the average number of international business concepts taught is nine, approximately 30 percent of the schools responding to the survey include five or fewer concepts in the business education curriculum. Forty percent of schools include six to ten concepts, while another 30 percent infuse eleven or more concepts into the curriculum.

Table 1
Internationalization by Course

Course	Number of schools internationalizing by: Entire Course	Unit(s)	Lesson(s)	% of Total "Yes" Respondents
Accounting	0	4	18	8%
Adv. Accounting	0	3	12	6%
Adm. Office Serv.	0	3	10	5%
Basic/Gen. Business	1	22	34	21%
Bus. Communications	0	5	13	7%
Business Law	0	7	15	8%
Business Math	1	1	3	2%
Business Principles/Management	2	9	17	10%
Business Occupations-In-School	1	4	13	7%
Business Occupations-On-the-Job	2	10	9	8%
Employability Skills	1	5	4	4%
Entrepreneurship	1	6	11	7%
Information Proc	0	2	11	5%
Marketing/Dist. Ed.	0	7	13	7%
Notetaking/Shorthand	0	0	10	4%
Personal Computer Applications	1	0	7	3%
Personal Finance/Consumer Ed.	1	2	6	3%
Recordkeeping	1	1	1	1%
Beg. Typing/Kybdg.	1	1	13	6%
Adv. Typing/Kybdg.	0	2	14	6%
Word Processing	0	5	13	7%
Other*	2	6	5	5%

*Other includes Small Business Computers, Business Economics, Free Enterprise, Economics, Exploring Business/Marketing, Business Concepts, Applied Economics, and Advanced Placement Economics.

Resources Used in Teaching International Business Concepts

"Yes" respondents were asked to check which types of resources were most often utilized in teaching international business concepts. A list of resources and the frequency of use are shown in Table 3. As the table indicates, well over half of the respondents use newspapers, textbooks, and magazines most frequently when teaching international concepts in business education classes.

Methodologies Used in Teaching International Business Concepts

Responses to an open-ended question requesting information in regard to specific strategies/activities utilized in teaching international business concepts may be found in Appendix I.

A review of the responses to this question indicates that the method of internationalization utilized by most Wisconsin business educators is the infusion method.

Several schools indicated that future plans include internationalizing of the business education curriculum. Additional comments from survey respondents regarding the internationalization of the business education curriculum maybe found in Appendix I.

Other Disciplines Teaching International Business Concepts

Of the 272 survey respondents, 168 (62 percent) indicated that international business concepts are taught in other disciplines in the high school. Table 4 shows that these concepts are most frequently taught in economics, social studies, and foreign language courses. Of the 161 schools indicating that international concepts were not taught in the business education department, 61 (38 percent) indicated that such concepts are not taught by any other discipline in the high school. Another 15 (9 percent) indicated that they did not know whether any other department in the high school included such concepts.

Additional Findings

A reference of textbooks and other resources used by Wisconsin business educators in internationalizing lessons, units, and courses is found in Appendix H. The text most widely used by Wisconsin educators in internationalizing courses is *Introduction to Business: The Economy and You* (South-Western Publishing Company).

Table 2
International Business Concepts Taught by Wisconsin Business Educators

Rank Given by Wis. BE Teachers	Concepts	No. of Schools Infusing in Curriculum	% of Schools Infusing in Curriculum	Rank Given by Sanchez
1	Understand diff economic systems in the world	91	84%	2
2	Understand reasons for exporting/importing	79	73%	5
3	Understand the marketing concept	75	69%	11
4	Understand how specific cultures impact bus prac	51	47%	3
5	Evaluate personal entrepreneurship opportunities	48	44%	39
6	Understand customer service	46	42%	32
7	Understand major trade regions of the world	43	39%	1
8	Use advertising, promotion, and pub relations tools	42	39%	44
9	Understand economic terms of int'l trade	40	37%	14
10	Understand pricing and sales strategies	38	35%	34
11	Understand the entrepreneurship content/problems	37	34%	42
12	Identify impact of geography on int'l trade	36	33%	6
13	Identify human resources of state/region	36	33%	28
14	Understand diff/sim of domestic and int'l business	30	28%	13
15	Understand the importing/exporting process	30	28%	38
16	Assess potential of product and its market	29	27%	22
17	Understand laws regulating exports/imports	25	23%	30
18	Evaluate jobs in int'l business	24	22%	33
19	Understand the metric system	21	19%	31
20	Understand overseas business travel	19	17%	47
21	Understand basic concepts of int'l finance	17	16%	12
22	Use a foreign/world language	16	15%	10
23	Understand the flow of import/export documentation	14	13%	27
24	Understand use of communication modes in int'l trade	14	13%	36
25	Use int'l business resources	11	10%	37
26	Analyze int'l distribution systems	8	7%	35
27	Understand documentation of letters of credit	6	6%	45
28	Understand cargo insurance	5	5%	48
29	Understand export and commercial licensing	3	3%	46
30	Identify documents necessary for exporting/importing	2	2%	43

Table 3
Resources Utilized in Teaching International Business Concepts

Resources	No. of Respondents Utilizing Resource	% of Total "Yes" Respondents Utilizing Resource
Co-op programs	11	10%
Field trips	17	16%
Magazines	65	59%
Newspapers	84	76%
Partnerships	3	3%
Speakers	29	26%
Tapes	17	16%
Television	27	25%
Text workbooks	31	28%
Textbooks	74	67%
Videos	35	32%
Other*	6	6%

*Other includes ads from foreign newspapers, research papers, seminars, general (non-educational) books.

Table 4
Other Disciplines Incorporating International Business Concepts

Disciplines	No. Including Int'l Concepts	% Including Int'l Concepts
Economics	111	66%
Foreign Language	88	52%
Mathematics	7	4%
Science	4	2%
Social Studies	111	66%
Other*	5	3%

*Other includes computer, marketing, and English courses.

Summary, Conclusions, and Recommendations

Summary

The study examined (1) how many business educators in Wisconsin are currently integrating international business concepts into their curriculums and (2) what concepts are taught, in which courses, and what types of resources are used to teach these concepts.

Information was obtained through the use of a written survey instrument completed by business educators in Wisconsin secondary schools.

The data were collected from a population of 475 schools, of which 272 responded. An analysis of returns indicates a slight variation in percentage of returns from different types and sizes of schools in comparison to the percentages of surveys sent. A representative sample of Wisconsin high schools was provided.

Frequency counts were made to determine which courses are most often internationalized, what concepts are infused into the curriculum, what resources are most often utilized by instructors in teaching international concepts, and which other disciplines in the high schools include international business concepts in their curriculums.

Conclusions

To the extent that the data and findings resulting from this study are valid and reliable, the following conclusions maybe drawn:

1. More than half of Wisconsin secondary schools have not taken steps to internationalize the business education curriculums in their respective schools.

2. Economics, foreign language, and social studies departments often teach international business concepts in their courses.

3. While a number of textbooks and other resources exist for teaching international business concepts, few specialize in international skills and knowledges; therefore, teachers are obligated to find and use resources creatively to infuse such concepts into the curriculum.

4. Wisconsin teachers emphasize the same concepts found in the Sanchez study, but there is a variation of opinion as to the degree of importance of the concepts.

5. More than one-quarter of Wisconsin high schools responding to the survey do not teach international business concepts in any discipline.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are made:

1. Business educators need to take the initiative in developing international programs in schools where none exist or where very little is being done at present.

2. High school business education departments should take the initiative necessary to develop collaborative programs with economics, foreign language, and social studies departments.

3. Business/business education seminars, conferences, and conventions sponsored by professional organizations and universities should focus on the internationalization of business education curricula.

4. Formal curriculum development should take place at the state level for internationalizing business education curriculum.

5. Universities should evaluate business education programs and provide required courses in international business concepts for all business education majors.

6. Publishers need to provide greater support for international business education programs through research and resources.

Suggestions for Additional Research

Based upon the literature reviewed in preparing the study, it is apparent that worldwide economic, political, and cultural conditions will continue to influence American society and education in ever greater measure. Suggestions for further research are based upon this knowledge as well as on the results of the survey of Wisconsin business educators. The suggestions are as follows:

1. Replicate the study in other states to provide additional information regarding what is being done to internationalize business education curricula by educators in other areas of the United States.

2. Conduct a study at the university level to determine (a) what is being done to internationalize curriculum at that level and (b) to determine what is being done to prepare business education majors to infuse international concepts into the courses they will teach at the secondary level.

3. Conduct a follow-up study at some time in the future (three to five years) to determine what initiatives

Wisconsin secondary business educators have taken to further internationalize the business education curriculums in their respective schools.

4. Conduct national and local studies among executives engaged in international business to determine those concepts considered most important for secondary business education to infuse into the curriculum.

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Appendices available from authors upon request.

Technological Excellence: Time Required and Compensation Received

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Dedicated in memory of David E. Gray

Abstract

Missouri business educators were surveyed to determine how much time they spend keeping technologically up to date and to what extent they are compensated for their efforts. Respondents indicated spending from one to over ten hours weekly in learning new software. Few are compensated.

Introduction

Business educators spend considerable time learning new software, learning how to operate new equipment, and setting up equipment and installing software. Many do this on their own--in their "spare" time and during the summer. Some receive compensation. Some do not. The purpose of this study was to find out how much time Missouri business educators spend in keeping technologically up to date and to what extent they are compensated for their efforts. A related concern is that business teachers may experience burnout in their attempts to keep technologically up to date.

Review of Related Literature

This section provides a review of the related literature. The areas to be considered are the following: Philosophical Basis of Practical Arts and Vocational-Technical Education, National Issues Confronting Business Education, and Job Related Stress/ Burnout.

Business teachers in the Missouri public school system are in a position to promote growth and development that will empower young people and/or adults to live and work in a world which "continues to change and become more complex" (Gysbers and Hughey, 1989). "Far reaching changes are occurring in local, state, national, and world economic and social systems. These changes, in turn, are having substantial impact on the nature and structure of the personal, social, and economic systems in which people live and the industrial and occupation structures where they work" (Gysbers and Hughey, 1989).

Philosophical Basis of Business and Office Education

Prior to the 1900s education had primarily been for the culturally elite population who enjoyed studying religion and the classics in order to become learned, enlightened, and literate. Education then became identified, in addition to the classical definition, as the key for the new nation to reach its social (elimination of crime, reduction of poverty and literacy), economic (increased productivity) and religions goals (Barlow, 1965). These are the foundations upon which modern-day education, vocational education and business and office education theory, methodology and ideology are based. The goal was to provide an agency "for social control with the democratic aspiration to 'liberate' persons and educate them as free citizens (Lucas, 1984)." A lack of agreement about how and for whom education should be made available in America was evident prior to the late 1900s and continues to be true today. Some believe education should be devoted to the classics and believe education is for all people in order to meet the economic and social needs of the nation. The leaders from industry continue to view the role of education institutions to be that of producing a competent and highly productive labor force; another group, humanistic progressive educators, see the role of education as socialization of the child to function as a self-sufficient member of society. It was during the time of the Industrial Revolution that vocational education/ business and office education became recognized as the component of the education issue to make the difference in America's scheme to create a literate citizenry and to provide a productive work force to promote human welfare and economic development.

Vocational education was seen as the potential vehicle that could make schooling more democratic and more relevant to the realities of the twentieth century as well as the method to promote job preparation and a highly skilled work force (Lucas, 1984). As a result, vocational education and consequently business and office education, became identified in high places as the means for identifying individual interests and abilities as well as to facilitate the transition from school to work to better meet the needs of business and industry.

National Issues Confronting Business Education

One of the most critical issues to be addressed by business education at this time is the IMAGE OF BUSINESS EDUCATION. Business teachers must become actively involved in marketing business education at every level of education as more than basic job-entry skills and promote business education as an occupational preparatory curriculum in which students are trained for promotability in a modern-day profession (Fry, 1988). For continued growth of the business office profession, business teachers must (according to a recent survey conducted by the National Business Education Task Force) take every opportunity to explain what business education is about and what it offers to the total population.

Effective articulation among junior high, secondary and postsecondary levels of business education has been cited as an effective strategy in changing the IMAGE OF BUSINESS EDUCATION. Catherine P. Warmbrod (1987) of the National Center for Research in Vocational Education emphasizes that articulation of business curricula is a good way to attract more and better students into business programs because it "generates more options, students can see where the program is leading, students are enthusiastic about using high school work to meet college course requirements, it is time and cost effective . . . and employers get employees with a higher level of skill development (Warmbrod, 1987)." In addition, having worked through the articulation process, competencies of each course at each level are clearly defined and teachers and course objectives are up-to-date as a result of the input provided by business and industry.

The facilitation of a vehicle by which business/industry and business teachers can work together more effectively will also greatly enhance the IMAGE OF BUSINESS EDUCATION. Donald M. Clark, President and Chief Executive Officer National Association for Industry-Education Cooperation, (1987) tells us that "A more responsive academic and vocational program in public/postsecondary education requires industry's direct participation in planning, curriculum development, inservice training of school personnel, upgrading instructional materials and equipment, and improving efficiency in educational management." Even though there have been partnerships in education as early as 1981, Clark notes that most of the partnership activities in the past have been too short-term and disorganized to produce significant school improvement.

What is needed, according to Clark, is an industry-education council with a coordinator who has an education background. Such a structure would then use industry's volunteer resources and education's financial resources to improve the existing partnership activities and advisory groups working with schools. The resulting curriculum modification, career education and inservice training would "foster economic development by preparing individuals for productive work, providing employee training and importing entrepreneurship (Clark, 1987)" and; thus, change the IMAGE OF BUSINESS EDUCATION.

Ward and Kilpatrick (1988) also advocate the need for business education to change by "restructuring and reorganizing courses" to project a new image and to receive a full vote of confidence. The role of business and office education in preparing students for the future business world is being addressed both at the national and state levels. In response to declining enrollments, the back-to-basics educational movement, changing work force needs and technological developments, recent curriculum developments in business education focus on keyboarding, integrated information processing, business communications and entrepreneurial concepts skills building.

Teachers at the elementary level as well as elementary administrators are incorporating the microcomputer for instruction in a wide variety of areas, thus creating the need to incorporate elementary keyboarding into the already overcrowded elementary curriculum. The matter of extending business education to the elementary level poses special concerns: the certification of elementary keyboarding teachers, administrative problems, delivery systems, economics, and how fast these youngsters might be expected to type.

Technological changes in hardware, software, integrated office systems and personal computers have made information technology a driving force in the preparation of young people for the future business office. Productivity is becoming an ever increasing topic, and technology is affecting the lives of every business worker. In order to meet the needs of business and industry, integrated software is being incorporated into the business office curriculum. Spreadsheets, which are used to change data and answer questions, are replacing out-dated bookkeeping/accounting procedures to teach the business world applications in the secondary/postsecondary classroom setting. The integration of electronic equipment such as computers, word processors and facsimile machines and telecommunications necessitate a solid foundation in integrated information processing (different computer-based functions and equipment such as word processing, data processing and telecommunications are linked electronically). Partnerships with business are making it possible for schools to acquire the hardware necessary to meet technological curriculum development needs of instruction in electronic communication methods (Reinhold, 1988).

As a result of advances in the area of electronic integration, business office workers are required to become more highly

skilled in business communications and more knowledgeable of business and related content areas. Instruction in writing, listening, speaking, reading and interpreting nonverbal cues must be provided in separate business communication courses and/or units in other business courses in order to equip students with a strong foundation in the total communication process. Entrepreneurial skill development integrated throughout the business education curriculum will provide students an understanding of organizational theory and enable them to make business-related decisions based on problem-solving strategies. Continued growth of the secretarial profession, the development of a new image for business education, and increasing enrollments will undoubtedly be the result of a strengthened competency-based curriculum designed to meet the needs of business and industry and promoted for public use by highly qualified directors of learning.

Sources of Job Related Stress/Burnout

Business and office education programs prepare individuals with a variety of skills needed in planning, organizing, directing, and controlling business office systems and procedures. The programs include instruction in preparing, transcribing, systematizing, and preserving written communications and records. Since the "information explosion" and business demand for increased productivity, business educators are incorporating more and more of the following items into their curriculums:

1. Information processing concepts, processes and careers;
2. Computer applications in word processing, data base management, financial modeling, business graphics, and communications/electronic mail;
3. Effective oral and written communications;
4. Computational skills development;
5. Keyboarding skills;
6. Integrated software and software applications in all aspects of business.

Since this is such an era of rapid technological change, frequent review and updating of business and office education curriculum is necessary. This brief survey of the related literature provides no information directly related to the job stress and "burnout" risks confronting business educators as a result of these rapid changes in the technology and the "information explosion." However, many sources of job related stress/burnout have been studied and are cited herein.

In a paper presented at the annual meeting of the American Educational Research Association and the International Association for Computing in Education in 1988, Joan L. Herman addresses the issue of teacher burnout upon considering the effects of the Apple classrooms of Tomorrow. The Sensible Technology Assessment/Research Model was used to evaluate and assess the effects of ACOT on student performance and its impact on teaching and learning. Some of the common effects in student performance included enhanced opportunities for individualized instruction, the rate at which students could manually produce text increased about 300 percent, motivation for schooling improved, significant gains in self-confidence and changes in students' independence and willingness to approach and solve complex problems. Process outcomes noted were an increased amount of spontaneous peer teaching, changes in teacher role from traditional teacher to facilitator and changes in instructional planning and goals wherein the textbook becomes merely a resource in a broader skill based approach.

On the downside, ACOT explores the possibilities of computer saturation and teacher burnout. ACOT require enormous amounts of time and energy with teachers "running as fast as I can just to keep up." Some researchers are concerned that computer literacy and keyboarding skill development emphasis may create a curriculum imbalance or shortchange the student in other academic areas such as social studies. There is also some concern regarding too much time on task required as opposed to spontaneous peer interactions. Others believe that coaching and cooperative learning lets "kids find new ways to get out of doing things."

The Los Angeles Community College District writes in a Report of the Commission for the Advancement of Teaching that technology and teaching sees the essence of education as information and communication in an "Information Age" and "Communications Revolution" wherein advanced computer and telecommunications technologies have created changes in the means of human interaction. The Commission for the Advancement of Teaching has identified four areas in which the rapid introduction of these new technologies is affecting teaching in our colleges: administrative support systems (registration, class schedules, attendance, recording grades, financial management, personnel and admissions), curriculum content, instructional technology, and teacher support services.

The Los Angeles Community College District further states that the need for high technology courses and additional sections in existing courses grow more pressing each semester. In addition, the subject matter taught in the main trade and technical courses changes as the state-of-the art in the trade or industry changes--at a very fast pace. The ability of an instructor to maintain currency in the field is being severely tested which creates a need for selective faculty retraining in order to serve the needs of society for highly skilled workers. In today's world, high-tech is not high-tech very long.

Therefore, the problem of technology, according to the Commission for the Advancement of Teaching, remains the need for professional growth opportunities in the area of technology. The Commission calls for a computer development program wherein an overall plan or coordinated activity to strengthen the infrastructure is implemented. People must be trained to manually operate machines, apply them to current functions and eventually, to perform new functions beyond those originally envisioned. The Los Angeles Community College District believes that to ensure vitality and commitment and prevent burnout, the faculty must be provided opportunities for professional development programming, administrative support, career satisfaction,

teacher support services and be recognized and rewarded for good teaching.

Margaret Fleming in the challenges of the Future for Teachers and Students of English cites "lousy pay, overload, politics, classroom discipline . . . inability to cope with arbitrary decisions on the part of apparently inept and powerdrunk administrators" as sources of burnout. Fleming advocates that "a person should stay in a career only as long as it remains challenging and stimulating" and that avoiding burnout would then necessitate an openness to "new areas for exploration within the parameters of one's own discipline" so that if and when it loses its luster, choose one of several other options opening up (Fleming, 1982).

Seidman (1985) reports that Maslach and Johnson in 1981 found that people in the "helping professions," such as teaching, frequently exhibit negative attitudes towards their students as well as tend to evaluate their own work negatively. These people were found to be emotionally and physically exhausted due to an inability to cope positively with job-related stress. Seidman defines burnout as "a syndrome of inappropriate attitudes towards clients and towards self, often associated with uncomfortable physical and emotional symptoms ranging from exhaustion and insomnia to migraine and ulcer as well as with "deterioration of performance" (Seidman, 1985).

A negative pattern of responding to stressful teaching events, to students and to teaching as a career, as well as a perception that there was a lack of administrative support was reported in the Seidman study. Low teacher morale and teacher burnout are associated with the inability to cope with teaching problems and with uncooperative students in a constructive manner and the failure of supervisory personnel to provide positive leadership. The high burnout group indicated a lack of motivation "to adapt course content to technology, to manipulate the equipment, and/or prepare software." The extremely burnedout worker tends to cope by using expressions of anger, sadness and/or depression, not trying harder, and shows a lack of enthusiasm and excitement.

Some tentative conclusions were reached in the Seidman study establishing a relationship between burnout and media use. The lower burnout group tended to use certain medial materials more frequently than did teachers who were more burned out. Also, there is some evidence to suggest that forcing teachers to use computers could contribute to higher burnout levels for high school instructors.

Occupational stress among business and office teachers resulting from rapid developments in technology has been little studied; however, the attributes of occupational stress in general, as reported by Henrietta Schwartz and others (1983) include: work overload, work that is too difficult, role ambiguity, being responsible for other people, under or over promotion, poor human relations at work, lack of participation in organizational decision-making and individual psychological differences.

In addition, Blackburn, Edington & Klos (1986) look at the relationship between job strain and quality of life indicators among university faculty and administrator responses to job strains. Job strains are defined as job characteristics which the person perceives as discomfort. Quality of life indicators refer to satisfaction related to life, satisfaction related to the job, health status and experience of psychophysiological symptoms and days ill. A statistically significant relationship was found between job strain and quality of life indicators. Raising one's tolerance of overload appeared to moderate feelings of life dissatisfaction; while a strong social support system and practicing more healthy habits seemed to reduce the number of days ill. Individuals with higher levels of self-esteem reported fewer health problems and indicated more satisfaction with their jobs and lives. Physical fitness programs were shown to have secondary benefits on self-esteem, job satisfaction, perceptions of job strains and the practice of healthy habits.

Seiler and Peason (1985) studied dysfunctional stress (distress and burnout) which they define as "a debilitating condition brought about by work-related frustrations and which develops progressively over time resulting in some form of withdrawal." The condition appears to be particularly prevalent in the helping professions and the strongest symptoms of dysfunctional stress were associated with those occupations in which the worker had the greatest responsibility for the well-being of others. Personality characteristics were found to play a role in an individual's reactions to potentially distressful situations--high achiever, self-sufficient, and idealistic. However, other researchers concluded that the causes of dysfunctional stress or burnout lie more in job conditions and situational pressures than in the personality traits of an individual. Thus, the identification and examination of elements of the work environment which produce dissatisfaction and/or anxiety, such as the demands created of business education teachers as a result of rapid technological developments, is both warranted and necessary.

In summary, it would appear that researchers are only just beginning to understand the relationship between stress and strain. It seems likely that some individuals can tolerate much higher levels of stress than others, and that one reason for the difference lies in the effective use of available coping responses, personal characteristics and/or strategies which can be learned or acquired in the interest of future improvement.

The Research Project

Purpose of the Study

The purpose of the research project was to find out how much time business educators spend in keeping technologically up to date and what compensation they receive.

Procedures

A questionnaire and cover letter were field tested by Delta Pi Epsilon members at a chapter meeting, revised, and then sent to a random sample of 595 Missouri high school business educators. A total of 299 questionnaires were returned; 11 of those returned were unusable.

Findings

The survey revealed that few business teachers are being compensated for their extra efforts relating to keeping up with technology. Only 31 of the respondents indicated they receive some form of compensation; 257 receive no compensation. As shown in Table 1, the size of school does not seem to affect whether or not teachers are compensated for their extra efforts.

Table 1
Compensation by Size of School

Size of School	Compensated	Uncompensated
50-250	5	77
251-450	10	54
451-700	4	33
700+	12	93
Totals	31	257

While respondents were asked to indicate the grade level they teach, many marked more than one level. Comparisons based on grade level were not made.

What forms of compensation are received? Respondents indicated a variety of types of compensation:

*per hour compensation ($10, $12, $20, $25, $35)
*contract extensions (10-day, 1 week)
*per week compensation ($75)
*contract supplement

How much time is spent in specific activities? Tables 2 and 3 show the time spent in compensated and uncompensated activities during the summer and during the school year.

Discussion

Apparently compensation is not a factor in the amount of time teachers spend in learning new software on their own. The majority of business educators are spending from one to over ten hours each week in learning new software both in the summer and during the school year. Learning new software through workshops and seminars is also an all-year activity for the majority of teachers.

Uncompensated teachers spend more time during the school year in writing instructional materials. During the summer, compensated teachers may spend a little more time on this activity; however, the majority of teachers indicate time spent in writing instructional materials.

Most activity relating to repairing and troubleshooting equipment occurs during the school year. Apparently this is not a time-consuming activity for teachers. Time spent installing software is about the same during the summer for compensated and uncompensated teachers. During the school year, more time is spent by uncompensated teachers on this activity.

Time spent in training other teachers is about the same during the summer for compensated and uncompensated teachers. During the school year, more time may be spent by the uncompensated teachers.

Compensated and uncompensated teachers spend about the same amount of time in reviewing and selecting equipment and software.

Compensated teachers may spend more time in reading about and researching information about new technology.

Table 2
Summer (Percent of Respondents)

Activity	Comp. Hrs.				Uncomp. Hrs.			
	1-3	4-6	7-9	10+	1-3	4-6	7-9	10+
Learning new software on my own	25.8	12.9	03.2	38.7	28.4	12.1	00.9	23.7
Learning new software - workshops & seminars	25.8	06.4	00.0	19.3	23.3	08.5	02.7	13.2
Writing instructional materials	19.3	12.9	00.0	22.5	19.4	05.0	03.1	11.2
Setting up equipment	22.5	12.9	00.0	06.4	14.7	06.2	03.1	07.0
Repairing/troubleshooting equipment	16.1	00.0	03.2	09.6	10.1	22.3	01.1	02.3
Installing new software	22.5	06.4	00.0	03.2	19.5	00.4	01.1	03.5
Training other teachers	09.6	03.2	00.0	09.6	07.7	02.7	00.0	01.9
Reviewing/selecting software	35.4	06.4	00.0	06.4	27.2	05.9	01.1	05.8
Reviewing/selecting equipment	19.3	03.2	00.0	12.9	16.3	05.0	00.0	03.8
Reading/researching information	32.2	12.9	00.0	19.3	16.3	05.8	01.9	08.5
Assisting students before and after school	06.4	00.0	03.2	09.6	00.7	01.6	01.3	01.9

Table 3
School Year (Percent of Respondents)

Activity	Comp. Hrs.				Uncomp. Hrs.			
	1-3	4-6	7-9	10+	1-3	4-6	7-9	10+
Learning new software on my own	40.0	20.0	00.0	20.0	31.5	16.3	04.2	22.5
Learning new software - workshops & seminars	20.0	20.0	00.0	20.0	19.8	05.8	01.1	03.5
Writing instructional materials	00.0	00.0	00.0	06.4	22.9	00.7	01.1	10.5
Setting up equipment	22.5	12.9	00.0	00.0	32.2	10.5	01.9	06.2
Repairing/troubleshooting equipment	40.0	00.0	00.0	00.0	36.1	05.4	01.5	07.3
Installing new software	00.0	20.0	00.0	00.0	27.2	04.6	01.5	03.5
Training other teachers	40.0	00.0	00.0	00.0	27.2	03.5	01.1	03.8
Reviewing/selecting software	60.0	00.0	00.0	00.0	37.7	10.5	00.0	04.2
Reviewing/selecting equipment	40.0	00.0	00.0	00.0	35.4	07.3	00.7	03.8
Reading/researching information	20.0	20.0	00.0	20.0	43.1	11.6	03.5	11.6
Assisting students before and after school	00.0	00.0	00.0	20.0	32.2	08.9	02.3	12.8

Teachers indicate they spend considerable time in assisting students before and after school during the school year. Twenty percent of the compensated teachers spend ten or more hours each week. As shown in the Table 3, over 70 percent of the teachers spend from one to over ten hours each week in this activity.

Summary

The data gathered for this study indicate that the majority of business educators spend considerable time both during the school year and during the summer in activities related to keeping up with technology. Few receive compensation. Compensation may be minimal.

Recommendations

In order to assist teachers in keeping up with technology, the following recommendations are made:

1. Develop recommendations for compensation for specific activities.

2. Provide workshops/seminars to assist in learning new software, trouble-shooting equipment, etc.

3. Encourage grant writing that will provide compensation for specific activities.

4. Encourage teachers to document time spent in activities related to keeping up with technology and share this with their administrators--request compensation.

Recommendations for Further Study

The review of literature indicates that the constant pressure to keep up may be related to stress and/or teacher burnout. A study could be developed to examine the relationship of the need for keeping up to date in business education with variables such as job satisfaction, stress, and burnout.

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The Use of Technology in Indiana Business Classrooms with Implications for Training

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Abstract

The purpose of this Pi Chapter study was to provide information about the use of technology in Indiana, thus providing a basis for evaluation of current programs and encouraging the implementation of necessary changes in preservice and inservice training opportunities. Four questions were addressed: (1) What software programs do Indiana business educators teach or plan to teach? (2) What business content do Indiana business educators teach with the assistance of microcomputers? (3) In what ways do Indiana business educators use the microcomputer in preparing to teach or in managing their own teaching records? (4) What are current business teachers' perceptions about needed inservice training for the purpose of utilizing technology? Findings lead to the conclusion that the use of technology is still focused on teaching computer applications rather than on using the computer to teach business content or as a tool to manage instruction. Implication for business education is that extensive inservice training is needed to fully utilize the power of the microcomputer in the classroom.

The perceived discrepancy between the school and the work environment should be of concern to business educators as they train people for the work place. This discrepancy is highlighted by the Office of Technology Assessment (OTA) report that identified two key issues pertinent to educational technologies: ways to use technology as a tool to extend teaching and learning and training teachers for a new role in electronic classrooms (*Power On! New Tools for Teaching and Learning: Summary*, 1988).

Various studies have found that teachers are inadequately trained to teach with computers. See Fulton, 1988; *Power On! New Tools for Teaching and Learning: Summary*, 1988; Lambrecht, 1986. According to the OTA report, new strategies to integrate technology across the curriculum are required.

Often teachers do not recognize their need for training (Lambrecht, 1986; *Power On! New Tools for Teaching and Learning: Summary*, 1988). A more recent study in the Mountain-Plains states indicated that the specific course approach rather than integration is still the method most teachers use for teaching word processing, spreadsheet, and database (Kizzier, Pollard, and Ford (1991).

Problem and Purpose

Concerns about using technology beyond software applications were expressed by Pi Chapter members of Delta Pi Epsilon in Indiana. As a result of this concern about the status of technology in Indiana secondary business education programs and the perceived training needs, this study collected data from a representative sample of business teachers in response to these questions:

1. What software programs do Indiana business educators teach or plan to teach?
2. What business content do Indiana business educators teach with the assistance of microcomputers?
3. In what ways do Indiana business educators use the microcomputer in preparing to teach or in managing their own teaching records?
4. What are current business teachers' perceptions about needed inservice training for the purpose of utilizing technology?

The purpose of this study was to provide information about the use of technology that would enable business teacher educators, administrators, state board personnel, and professional business education organizations to evaluate current programs and to encourage and/or implement any necessary changes in preservice and inservice training opportunities.

Methodology

To undertake this study, a research committee was named by Pi Chapter of Delta Pi Epsilon, Ball State University, representing university and secondary educators. Procedures for the study required designing a questionnaire, identifying subjects for this survey, and determining a research design.

Questionnaire. A questionnaire designed by Lambrecht (1986) was modified by the research committee. The first eight questions sought demographic information about the respondent's educational environment and training.

The next three questions dealt with types of microcomputer software programs currently taught or that were anticipated, business content taught with the assistance of microcomputers, and the ways in which teachers used microcomputers to assist in preparing or managing instruction. Space was provided to check those areas in which inservice training was desired.

The final form of the questionnaire was sent to selected Pi Chapter members as a pilot. Based on feedback, minor revisions were made.

Subjects. The list provided by the State Department of Education included 1474 high school business teachers in Indiana. That list was coded to indicate teacher location in the northern, central, or southern third of the state, as well as whether the teacher was in a small department (one to three teachers), medium department (4 to 6 teachers), or large department (more than 6 teachers). A sample of 200 teachers, stratified by department size and region, was randomly selected to receive the questionnaire. One follow-up letter was sent. Responses were received from 117 (58.5 percent) teachers. A cross section of responses were received from all three locations and departments.

Research Design. Information received was tabulated and analyzed to determine the use of technology in Indiana secondary business education classes.

Findings

Cross tabulations provided comparisons of the four research questions by various demographic information. Analysis of the information indicated no significant differences when compared by size of department, region of the state, years of teaching experience, and whether or not the teacher had a data processing endorsement. Additional findings are identified as follows.

How Software Is Taught

The percentage of the responding teachers who taught software programs as a separate course are identified in Table 1.

Table 1
Rank Order of Software Programs Taught as Separate Courses

Software	N	Percent
Word Perfect	35	29.9
Accounting	12	10.3
Programming	9	7.7
Spreadsheets	7	6.0
Databases	6	5.1
Desktop Publishing	5	4.3
Graphics	3	2.6
Payroll	1	.9
Marketing	1	.9
Telecommunications	1	.9

Of the 117 respondents, 35 (29.9 percent) indicated they taught word processing as a separate course. Accounting, programming, spreadsheet, and database are taught as a separate course by less than 10.3 percent or fewer of the teachers.

Table 2 identifies the software programs used as a part of a course.

Table 2
Rank Order of Software Programs Taught Within Another Course

Software	N	Percent
Spreadsheets	44	37.6
Word Processing	42	35.9
Accounting	41	35.0
Databases	41	35.0
Payroll	31	26.5
Desktop Publishing	27	23.1
Graphics	27	23.1
Invoice/Billing	17	14.5
Telecommunications	10	8.5
Income Tax	10	8.5
Presentation Graphics	9	7.7
Programming	9	7.7
Marketing-Sales Receivable	7	6.0
Marketing-Sales Analysis	7	6.0
Scheduling/Calendaring	7	6.0
Marketing-Merchandising	5	4.3

Whether taught as a separate course or within a course, word processing and accounting are the two most frequently taught software programs. Spreadsheet and data base are more frequently taught within a course. Twenty-nine teachers (24.8 percent) indicated they did not teach any business or marketing software programs on the microcomputer.

In comparing Table 1 and Table 2, more teachers are teaching software programs within a course than as a separate course. Approximately 35 percent of the respondents integrate word processing, spreadsheet, database, and accounting software programs rather than teach these programs as a separate course. Whether integrated or as a separate course, word processing is the most frequently taught software program.

Business Content Taught with Computers

Teachers were asked to indicate what content is taught with the assistance of microcomputers for drill and practice, tutorial, simulation, or problem solving. The terms were defined for the respondents as follows:

Drill and Practice: Provides exercises for repetitive practice in a specific subject area.

Tutorial: Instructs, drills, and evaluates the student. Prior knowledge is not assumed.

Simulation: Turns computer into a model of a specific environment for learning experiences otherwise difficult to complete in the traditional classroom.

Problem Solving: Provides information and data to aid in solving a problem. Student applies previously taught concepts.

Of the respondents, problem solving is utilized to teach accounting principles by 23 (19.7 percent). Less than 10 percent of the teachers indicated the use of problem solving in any other course. Drill and practice is used to teach introductory keyboarding by 18 respondents (15.4 percent), skill building by 18 (15.4 percent), and production keyboarding by 16 (13.7 percent). Less than 8 percent indicated the use of drill and practice in any other course. Of the respondents, simulation is used in accounting principles by 15 (12.8 percent), in production keyboarding by 17 (14.5 percent), and in office procedures by 12 (10.3 percent). Less than 6 percent indicated the use of simulation in any other course. Less than 5 percent indicated the use of a tutorial for teaching business content. Twenty-six teachers (22.2 percent) indicated they do not use the microcomputer to teach any business or marketing content.

Computer Use as a Management Tool

Teachers were asked to indicate how often they used the computer to aid in preparing to teach or manage their teaching records. "Often" was defined as at least once a week; "occasionally" was at least once a month, but not weekly; "seldom" was at least once a semester, but not every month.

Of those 86 (73.5 percent) who do utilize the computer in some way for teacher-management, 61 or 52.1 percent used word processing "often." Of this same group, 21 (17.9 percent) used grade book maintenance and 20 (17.1 percent) used the spreadsheet "often." In the "occasionally used" category, 20 (17.1 percent) of the teachers used data base to teach or manage their teaching records. Spreadsheets were used "occasionally" by 17 (14.5 percent) of the respondents.

Perceived Inservice Need

Teachers were asked to specify their training needs in response to each of the three questions. In addition to the results for each question, the responses were analyzed as to whether those who use the computers to teach or manage instruction had different training needs than those who do not use the computer to teach or manage instruction.

Perceived need for software programs. The responses about perceived training needs for teaching software programs are rank ordered in Table 3.

Table 3
Rank Order of Teachers' Perceived Needs for Software Training

Software Program	N	Percent
Desktop Publishing	40	34.5
Spreadsheets	34	29.3
Graphics	29	25.0
Databases	29	25.0
Accounting	27	23.3
Telecommunications	24	20.7
Word processing	23	19.8
Presentation Graphics	21	18.1
Scheduling/Calendaring	21	18.1
Programming	16	13.8
Payroll	15	12.9
Income Tax	14	12.1
Marketing-Sales Recording	12	10.3
-Sales Analysis	12	10.3
-Merchandising	12	10.3
Invoicing/Billing	10	8.6

The most frequently identified software program that teachers desire training about is desktop publishing (n=40, 34.5 percent). Several programs were identified by at least 25 percent of the respondents; namely spreadsheet, graphics, and databases.

Perceived training need for integration. No more than 16 percent of the teachers specified a desire for training about how to integrate the computer with the content in specific courses. Ten to fifteen percent of the respondents identified those courses in the following order: accounting principles (15.4 percent), each phase of keyboarding (12 percent), business communications (11.1 percent), and office procedures (10.3 percent).

Perceived training needs for instructional management. Some teachers indicated they would like to learn to use the following to aid in their preparation to teach or manage their teaching records. Table 4 specifies these perceived needs.

Table 4
Perceived Need for Training about Management of Instruction

Function	N	Percent
Desktop Publishing	34	29.3
Spreadsheet	27	23.3
Database	23	19.8
Gradebook Maintenance	20	17.2
Utilities	18	15.5
Test/Drill generator	16	13.8
Test answer sheet scoring	15	12.9
Word Processing	15	12.9
Graphics display/slid shows	15	12.9
Authoring software for lesson creation	15	12.8
Operating Systems	14	12.1
Games generation	11	9.5

Less than 30 percent of the teachers indicate any need for training that will assist their management of instruction.

Findings/Conclusions/Recommendations

The results of this study identify how teachers are using technology in the classroom to teach and to prepare and manage their instruction, as well as to identify their inservice needs in these areas:

1. Not all business educators in Indiana are using the computer to teach or manage instruction. Approximately 25 percent of the responding teachers are not using technology to teach software as a separate course or integrated in a course, nor are they using it as a tool to teach business content or to manage their instruction. It is recommended that all teachers utilize the computer as a tool to assist in their instruction and the management of their instruction, not only to teach specific software applications.

2. The majority of business educators in Indiana are not integrating software packages into classes. Approximately one-third of Indiana business educators are integrating word processing, spreadsheet, database, and accounting in existing courses which is in line with the OTA recommendation. It is recommended that more integration of technology be implemented in existing courses to reverse the trend of adding separate technology-related courses.

3. The use of computers to teach business content is not extensive. Respondents were provided 20 content areas with four kinds of activities (drill and practice, tutorial, simulation, problem solving) yielding 80 categories. Only ten of these categories were identified by at least 10 percent of the respondents as areas where they currently teach business content with the use of a computer. It is recommended that preservice and inservice training programs include information about how to teach business content with microcomputers.

4. Teachers in Indiana are using the computer to manage their instruction on a very limited basis. Approximately 50 percent of teachers use word processing "often" to manage their instruction and 17 percent use spreadsheet or gradebook maintenance "often." It is recommended that preservice and inservice programs should include information about how to manage their instruction with the assistance of a microcomputer.

5. Most of the respondents in this study did not indicate a strong desire for additional training of any kind. The only areas of interest were desktop publishing (34.5 percent) and graphics, spreadsheet and database (25 percent each). These findings concur with Lambrecht's study (1986) of instructional microcomputer applications in Minnesota when she concluded that teachers who are in most need of additional information may not be aware of or are unwilling to indicate their training needs. It is recommended that inservice training opportunities be designed, promoted, and implemented by universities, state agencies, and professional organizations.

Implications

Studies by Lambrecht (1986) and Kizzier, et al (1991) indicate we have been and still are preoccupied with teaching word processing, spreadsheet, and database software applications as separate courses. In attempting to follow OTA's recommendation of integration, business education programs should be process oriented rather than product oriented in the teaching of technology. Instead of only teaching which buttons to push, attention also should be directed to the concept behind the software program and the ultimate power of the technology. Currently only 37 percent of the respondents integrate software programs and only 10 percent teach content with microcomputers. Improving these statistics is a matter of survival for business education. The implication of this statistic is that extensive preservice and inservice training is needed. All business teachers should be able to integrate software programs with content and use the computer as a teacher-management tool to achieve effective delivery of instruction that will prepare students for today as well as tomorrow.

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PART II
RESEARCH TRAINING PAPERS

Assessing the Development of Critical Thinking

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Abstract

There are three basic ways to assess the development of critical thinking--commercial tests, commercial tests with modifications, and teacher designed and implemented evaluations. The focus of this paper is teacher designed and implemented evaluations. Performance and authentic assessment are defined, and guidelines for designing an authentic assessment are provided. When assessing critical thinking, it is apparent that more than one form of assessment should be used, that clear identification of the process of critical thinking is necessary, that the critical thinking components of activities must be defined, that scoring procedures must be carefully designed, and that tests must be administered consistently. Research about alternative forms for assessing the development of critical thinking skills is needed.

Critical thinking skills have been defined as an essential workplace skill by the Secretary's Commission on Achieving Necessary Skills (U.S. Department of Labor, 1991). At best, the definition of critical thinking can be referred to as an *emerging* definition. Major theorists agree that the core of critical thinking includes abilities and attitudes such as: identifying assumptions, clarifying and being relevant, understanding logic, and judging the reliability and credibility of sources. A key factor is the ability to transfer this skill to other learning tasks, both in school and in the workplace, so that students are prepared to work immediately, independently, *and* in a timely manner. Regardless of the definition, there is general agreement that *process*, rather than *product*, should be the focus.

When developing a research design about critical thinking, a primary concern is defining a way to determine whether or not critical thinking skills have been developed. The assessment tool chosen must be sensitive enough to identify changes that have occurred in students' thinking skills.

Current testing practices in American education do not provide sufficiently sensitive tools for assessing the effects of our efforts to teach thinking and reasoning. This should not be a surprise. Wolf, LeMahieu, & Eresh (1992) pointed out that we have rarely developed productive assessment and accountability systems--despite the fact that our students are among the most tested in the world. According to Archbald and Mann (1988), traditional tests tell us little about the quality of a student's specific accomplishments and often measure trivial, meaningless learning.

For the most part, traditional measures of achievement have been standardized and reflect education's preference for quantifiable scores based on objective tests. These standardized tests of critical thinking which are currently available yield scores that do not reflect or measure the processes students used to arrive at their answers. This difficulty in assessing critical thinking has been an obstacle in conducting empirical research and may be the reason why a review of the literature does not disclose many studies about the *development* of critical thinking in business education.

This report briefly reviews some of the possibilities for quantitatively and qualitatively evaluating the development of critical thinking and documents the need for using multiple measures of critical thinking when designing research in this area.

Ways to Evaluate Critical Thinking Skill

The purpose of evaluation is to provide evidence that students learn to do the things a program purports to teach. Resnick (1987) reflected dissatisfaction with current evaluation practices when she indicated

> useful evaluations of higher order skill training programs require that the educational outcomes [processes] of interest be directly assessed. We cannot afford to rely on evidence that certain performances [products] traditionally associated with strong education outcomes have improved (p.32).

However, optimism about the development of ways to evaluate critical thinking has been expressed by Baron and Kallick (1985) when they indicated that "tests of thinking skills are limited only by the thought that goes into their design" (p. 281).

A key factor in determining the method of evaluation is development of a set of evaluative criteria, including the discernible behaviors and dispositions that accompany effective thinking. Baron (1987) suggested that students participate in establishing criteria, as well as in trying them out. Doing so helps teachers and students to develop a clear set of goals, monitor their programs, provide ownership, and enhance their ability to apply effective thinking, all of which result in more accurate evaluation.

In considering ways to evaluate critical thinking, three possibilities are: commercial tests, commercial tests with modifications, and teacher designed assessments. A description of each method follows.

Commercial Tests

Several tests currently available in North America have been identified and described by Kennedy, Fisher, and Ennis (1991). These tests are classified as multi-aspect and aspect specific tests. Multi-aspect tests are called *general critical thinking tests* because they attempt to assess critical thinking skills as a whole. In contrast, an *aspect-specific critical thinking test* is aimed at only *one* aspect of critical thinking ability, e.g. identifying assumptions. Most are multiple choice tests that can be machine scored.

The multi-aspect tests (listed alphabetically) are: Cornell Critical Thinking Test, Level X and Level Z (1985); Ennis-Weir Critical Thinking Essay Test (1985); New Jersey Test of Reasoning Skills (1983); and Watson-Glaser Critical Thinking Appraisal (1980). Information about these tests is available in Norris and Ennis (1989), Poteet (1989), Tompkins (1989), Quellmalz (1985), Berger (1985) and Helmstadter (1985).

The aspect-specific tests (listed alphabetically) are: Cornell Class-Reasoning Test, Form X; Judgement: Deductive Logic and Assumption Recognition (1971); Logical Reasoning (1955); and Test on Appraising Observations (1983). Information about these tests is available in Norris and Ennis (1989), and Howie (1959).

When considering either type of assessment, general or aspect-specific, Norris and Ennis (1989) concluded that most of these tests contain problems for measuring critical thinking. Some problems identified were: varying levels of test sophistication, sections that do not evaluate critical thinking, omission of aspects of critical thinking on the general tests, and using artificial content requiring assumptions about transfer of information. Use of a commercial test as a single measure of critical thinking is not advisable.

Modifications on Commercial Tests

Possible modifications that may increase the reliability and validity of quantifiable commercial tests have been suggested by Kennedy, Fisher, & Ennis (1991), Norris & King (1984), and Quellmalz (1985). Their suggestions are:

1. Since commercial tests provide only one correct judgment in multiple choice format, an option is to provide a number of alternative justifications for the judgment students make. These can be scored in combination with the "correct" answer. This was an evaluation methodology used in the Eight Year Study (Progressive Education Association, 1939).
2. Another way to evaluate is to interview a number of representative students from the targeted population to find out how they think about the items and what kind of justifications they offer. The interviewing procedure consists of a series of stages progressing from relatively nonleading to relatively leading questions (Norris, 1989). Students can then be retested on items that are not clear. Of course, the test would be only applicable to the population represented.
3. Norris (1989) also suggested the possibility of asking examinees to think aloud while working on items and reported empirical evidence that such a practice did not alter the performance compared to silent paper-and-pencil test taking.
4. Essay tests leave the students more room to justify the judgments they make. An essay test such as the Ennis-Weir Critical Thinking Essay Test (1985) aimed at grades 7 through college could be used. The variation could include an interview as follow-up to seek clarification of unclear items. A repeat-test format could be used on items that seem unclear.

Teacher Designed and Implemented Activities

A review of the literature provides extensive information about assessment issues and reflects disenchantment with standardized tests as *the* accepted measure of achievement. The primary reason for this dissatisfaction has been recognition that data from norm-referenced multiple-choice tests compare students to one another and emphasize skills out of context (Brandt, 1992).

Alternative forms of assessment have been suggested. Two terms appear in the literature: performance assessment and authentic assessment. In some cases, the terms are used interchangeably. However, Meyer (1992) indicated that they are **not** synonymous. In *performance* assessment, students are asked to perform specific behaviors that are to be assessed and refers to the kind of student response to be examined. On the other hand, *authentic* assessment is performance assessed in a content more like that encountered in real life. The key is "in context." To label an event as "authentic," the assessor must specify in what respects the assessment is authentic.

When considering the evaluation of critical thinking skills, performance or authentic assessment add a viable alternative to the business educator's options. Both types may be used for formative and summative evaluation of classroom learning. However, since business educators prepare students for the work world, authentic assessment should be the preferred type of summative assessment for research designs. Critical thinking skills evaluated in the context of authentic activities must be the goal.

Key questions to ask when designing an assessment, as identified by Wiggins (1992), Director of Research and Programs at the Center On Learning, Assessment and School Structure (CLASS), are:

1. What kind of essential tasks, achievements, habits of mind, or other valued "masteries" are falling through the cracks of conventional tests?

2. What are the core performances, roles, or situations that all students should encounter and be expected to master?

3. What are the most salient and insightful discriminators in judging actual performances?

4. What does genuine mastery of each proposed assessment task look like? Do we have credible and appropriate exemplars to anchor our scoring system? Have we justified standards so they are more than local norms?

5. Are the test's necessary constraints--imposed on help available from others, access to resources, time to revise, test secrecy, prior knowledge of standards--authentic?

6. Do our assessment tasks have sufficient depth and breadth to allow valid generalizations about overall student competence?

7. Have we ensured that the test will not be corrupted by well-intentioned judges of student work?

8. Who are the audiences for assessment information, and how should assessment be designed, conducted, and reported to accommodate the needs of each audience? When are audit-tests appropriate and inappropriate (p. 26)?

When selecting a task to use as a valid assessment of critical thinking, two key questions must be asked: (1) What does mastery of the task look like? (2) What will we be able to properly infer from the collected student work? To answer these questions, activities must be selected, a scheme for scoring determined, and the assessment administered.

Selecting Activities

According to Brophy & Alleman (1991), activities may or may not result in desired learning experience. The activities go into the planning portion of the learning experience, but the experiences obtained are considered in evaluating the learning outcomes. To facilitate an optimum learning experience resulting in the development of critical thinking, activities selected should be varied; be justifiable (make a contribution to curriculum goals); have multiple focus (such as knowledge, thinking skill, and attitudes); be open ended to encourage a variety of responses; have the potential for increasing self-confidence in the ability to learn; be sequentially structured; and encourage transferability of acquired knowledge (Brophy & Alleman (1991).

In designing the activities, the teacher/researcher should define the primary principles that *must* apply to each individual activity, as well as those that *may* apply to each individual activity. Other activities may apply to a *set* of activities, rather than to individual activities. The important issue is that they are predetermined and defined. Examples of activities that can be used include portfolios, profiles, exhibitions, open-ended questions, essays, hands-on problems, inbasket exercises, and computer simulations of real-world problems. Suggestions for scoring some of these activities are included below.

Scoring Procedures

Two questions that must be asked when determining a scoring system are: (1) What qualities or characteristics represent each level or quality of response? (2) What errors are most justifiable in determining when to lower scores.

Examples of scoring techniques were provided by Archbald and Newmann (1988), and are identified as holistic grading and analytical scoring of writing and scoring considerations for inbasket exercises, portfolios, and observations.

Two discrete scoring procedures that will provide a quantifiable score yet will also meet the criteria for authenticity in the areas of writing ability and analytical problem solving are holistic scoring and analytic scoring.

Holistic scoring can be used with essay tests or business letters. First, a team of experienced readers each select about 35 papers for the task being evaluated. These "benchmark" papers are duplicated and given to all graders. According to Wiggins (1992), the papers "benchmark" the standards for performances to ensure that scoring standards are wisely chosen and suited to wider-world or next-level demands. In business education, the prevailing "benchmarks" have historically been determined by local standards.

Guidelines are handed out with specific criteria corresponding to each of four possible scores, identified as:

1. Highly flawed--not competent, defined as: Ideas poorly communicated, frequent usage errors, incorrect mechanical conventions, sentence fragments and run-ons, and no concept of paragraph construction.

2. Unacceptable--not competent, defined as: Poor organization of ideas, frequent usage errors, inconsistent use of mechanics, sentence fragments and run-ons, and poor topic sentence and flawed paragraph development.

3. Minimally competent--acceptable, defined as: Ideas sufficiently organized and communicated, occasional usage errors, basically correct mechanics, minimum number of sentence errors, correct paragraph construction, and some attempt at paragraph transition.

4. Competent--clear mastery, defined as: Ideas clearly communicated, no usage errors, correct mechanics, correct sentence structure, well developed paragraphs, excellent vocabulary, and effective paragraph transitions.

Then, the criteria is applied to these "benchmark" papers to set the standards. The remainder of the papers are scored individually by two readers and scores are summed to determine a single, final score. If the scores vary by more than one point out of four, the paper is read by a third reader. Inter-rater reliability of holistic grading is high, in the .7 to .9 range (Hogan and Mishler, 1981).

In *analytical scoring*, paid readers are used to read students' papers. Each writing sample has two readers. A procedure similar to above process is used, except that the writing samples are scored on multiple criteria rather than on a single holistic judgment of quality. Organization, sentence structure, usage, mechanics, and format are the criteria used, and each student is rated 1 to 5 on each of the criteria. The criteria may be weighted differently for the various grade levels. For further discussion of specific programs and issues in the assessment of writing, see Greenberg, Wiener, and Donovan (1986).

Evidence of critical thinking was not specified as a criteria; however, evidence of processes such as identifying assumptions or clarifying issues may be defined and included. Authentic experiences related to business writing situations should be selected.

When doing *inbasket exercises*, students adopt roles and describe how they would respond when a decision must be made under realistic time and information constraints. Students must rely on their prior knowledge about the roles of others involved in the situation. Performance is evaluated by panels of judges, some of which may be community professionals with expertise in the roles to be simulated. Processes involved in critical thinking must be clearly defined.

Portfolios document a student's experiences and accomplishments. This may include the products of instructions, such as curriculum transcripts, scores on standardized tests or other exams, evidence of membership and participation in special clubs or events, letters of recommendations, and may be validated by appropriate authorities. In addition, activities that were accomplished by applying critical thinking processes should be included, such as case studies, critiques of situations, recommendations about authentic situations, or excerpts from diaries that reflect on learning. In addition a rationale, identifying the reasons for the selection of items in the portfolio itself, may be presented for evaluation.

Observations are another possible assessment technique. Costa (1985) and Feuerstein (1980) identified ten characteristics of intellectual growth that teachers can observe and record, which they believe provide more usable information about growth in intellectual behaviors than typical tests. These are: perseverance, decreased impulsiveness, flexible thinking, metacognition, careful review, problem posing, past knowledge, transference beyond the learning situation, precise language, and enjoyment of problem solving. The key to using these behaviors for assessing performance is the teacher's ability to recognize them.

Administering Assessments

Administration of an activity is a serious consideration in planning assessment. A major question to ask is, What kinds of constraints would students authentically face with regard to time, reference materials, other people, prior knowledge of tasks, and how they will be assessed? These guidelines should be thoroughly detailed and documented so that tests are not invalidated by varying the instructions, the amount of assistance provided, and the depth of response given to students' questions.

After everything is ready, the assessment should be piloted to determine problems that may be present. Undoubtedly, clarification will be needed in some areas. When these trouble spots are eliminated, the assessment is ready for use.

Reliability and Validity Considerations of Authentic Assessments

Obviously the major problem with teacher designed assessment activities to measure the development of critical thinking is establishing reliability and validity.

Validity at its simplest level, according to Herman (1992), indicates whether the scores accurately reflect the knowledge, skills, and abilities they are intended to measure. The underlying principle of assessment was voiced by Lindquist (1951) when he noted that "the most important consideration is that the test questions require the examinee to do the same things, however, complex, that is required to do in the criterion situations" (p. 154).

Reliability refers to the consistency of a measure--or the degree to which that measure can be expected to provide similar results for the same subject under different conditions. When the investigator finds that there are no suitable instruments available for measuring some factor, there are several methods of estimating reliability. Most of these methods call for computing a correlation coefficient between two sets of similar measurements. In assessing performance, determining reliability is even more important. For example, according to Brandt (1992), an unpiloted, one-event testing in the performance area would be more dangerous than one-shot multiple choice testing. Establishing reliability of a test is easier than establishing its validity; and care should be taken to assure that the correct procedure is used.

When dealing with the assessment of performance, traditional views of validity and reliability need rethinking. In fact, the traditional criteria used to validate traditional tests need to be expanded. The following is one set of criteria and factors to consider which were suggested by Linn, Baker, & Dunbar (1991) for use when designing complex assessment of performance.

1. *Consequences*. Validity of assessments must include the context of use and whether that use has intended and/or unintended consequences. An example would be evident in the selection of the contents of a portfolio. "Best" samples

may be refined and the amount of teacher's help may affect the validity of the portfolio. Does the portfolio really measure the students' critical thinking skill in evaluating and presenting evidence of performance? Standardized tests can be corrupted and so can other forms of assessment.

2. *Fairness.* Eliminating gaps in performance because of differences in groups (such as race, age, and gender) are of concern in all testing situations. Attempts at dealing with diversity of backgrounds includes providing a range of topics or using tasks specific to the culture or instructional background. Add to this the training and calibrating of raters and one can understand why this area provides a major challenge to validity.

3. *Transfer and Generalizability.* Results of a study by Shavelson, Baxter, and Pine (1990) suggested that students performing on one task do not necessarily perform as well on similar tasks, implying that there may be a limited degree of generalizability across tasks on assessments of performance. A solution may be increasing the number of assessments. In fact, Brandt (1992) reported Wiggins' recommendation that at least six different tasks of a similar kind should be performed to make sure inferences about overall mastery are valid. These tasks should include evidence of the development of critical thinking skill.

4. *Cognitive Complexity.* It should not be assumed that higher-order skills are involved only with difficult subject matter. Rather, it depends on analyses of the tasks, the student's familiarity with the problem, and the way in which students attempt to solve them--all process oriented activities.

5. *Content Quality.* Quality needs to be consistent with the best current understanding in the field. At the same time, aspects of quality that will stand the test of time must be considered. It would also be useful to provide evidence about the ways in which students interpret the content that is presented. Subject matter specialists are imperative in designing and reviewing tasks, especially those integrating critical thinking.

6. *Content Coverage.* Developers of performance-based assessments must be sure adequate content is covered. Critical thinking aspects and their integration with content must be clearly identified.

7. *Meaningfulness.* An untested assumption is that students must be motivated to perform well. This is an area of needed research.

8. *Cost and Efficiency.* Performance or authentic assessments are more labor intensive than traditional standardized tests and research is needed to determine efficient data collection designs and scoring procedures.

Developers of new alternatives for assessment are, for the most part, some distance from having validated assessments. However, one area of relative technical strength is knowing how to reliably score essays and other open-ended responses. Baker (1991) indicated that research on writing assessment informs us that: (1) raters can be trained, (2) validity and reliability can be maintained through systematic scoring procedures and ongoing reliability checks, and (3) rater training reduces the number of required ratings and costs of large scale assessment. Baker (1991), also found that the military has used these assessments on a large scale. Shavelson concluded that the generalizability of these scores, however, remain a challenge(Shavelson, Baxter, & Pine, 1990; Shavelson, Gao, & Baxter, 1991). His research suggested 8 to 20 tasks were needed to obtain reliable individual level assessments, far more than the six recommended by Wiggins (Brandt, 1992).

In discussing projects developed by the National Center for Research on Evaluation, Standards, and Student Tests (CRESST), Herman (1992) reported it was possible to assess the depth of student understanding in specific subjects. Comparable, parallel tasks based on pre-specified design characteristics can be used, as well as uniform scoring schemes across disciplines. In addition the same instrument can be used to derive holistic information for large-scale assessment while eliciting diagnostic information for improving classroom practice.

Summary

At this point, the business educator should recognize that the concept of authentic assessment is not unfamiliar. Many of the suggestions above have been used in business education classrooms in one way or another.

What is now required is *refinement* of the process. Traditional methods of assessment have been comfortable because they yield a quantitative measure. Assessment activities, such as those recommended when evaluating inbasket exercises, have been less comfortable because the processes involved are more difficult to quantify. Refinement of techniques that will assess critical thinking in authentic situations will assist business educators to conduct reliable and valid assessment of student performance, both in relation to the students' learning needs and the needs of business.

Assessment of authentic tasks requires that the evaluator have a clear understanding of the critical thinking processes and characteristics that need to be demonstrated. As O'Neil (1992) indicated, the assessment of performance is a powerful change agent because, "you cannot assess performance unless you teach performance" (p. 16).

When relating this form of assessment to the evaluation of critical thinking skill development, it is apparent that more than one form of assessment should be used, that clear identification of the process of critical thinking is necessary, that the critical thinking components of activities must be defined, that scoring procedures must be carefully designed, and that tests must be administered consistently. There is no doubt that research about

methods of assessing the development of critical thinking skills is sorely needed. However, application of these conclusions about assessment to the classroom will enhance the quality of instruction provided in business education--not only of critical thinking skills, but of the traditional products of instruction as well.

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Problem Identification in Research About Teaching Problem Solving

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Introduction

As a participant at a research conference in your field, you are part of a select group of professionals who want to advance their education and to ask questions about the ways we currently go about our business. That you are willing to spend three days at a conference developing and carrying out a research project makes you part of an even more select group: you haven't yet appreciated the social aspects of conferences that you are sacrificing for this intense effort. You probably are not yet fully aware of the challenge we have undertaken to both become engaged in a valuable learning activity during this conference time and, in doing so, also address an important question in business education. Our primary expectation is that you will not only gain some "hands-on" experience with research procedures, but the ideas discussed will in turn affect your work as you continue to pursue other teaching and research endeavors. Not incidental to these expectations, we have also planned activities that will allow you to get to know each other well. You will not miss out on the opportunities that meetings such as this offer to establish important professional friendships.

I would like to overview a small segment of the issues related to the broad area of our research topic, teaching problem solving, and to place these issues within the context of identifying a researchable problem. The first task of any research project, and probably the most time consuming, it to establish the need for answering a specific question and clarifying what that question, in fact, is. Not every question of wonderment or puzzlement is researchable, at least not until it has been expressed in a form that lends itself to the conduct of research procedures.

We can't replace in our opening remarks here the content of research courses which approaches problem identification more systematically. To help us use our short time together effectively, problem solving as the domain of interest has been selected as a start to expedite the process. I will narrow this further as I zero in on three broad approaches to teaching problem solving. I would then like to suggest that some fundamental assumptions that individuals can make about social activities, activities such as learning and teaching, can influence the preference they may have for teaching problem solving in a certain way. In addition, these assumptions will also affect the way they perceive the research problem. At the end of our time period, I will give you a questionnaire on the topic of teaching problem solving. This is your homework assignment to bring back with you tomorrow morning.

Need to Teach Teaching Problem Solving

You already know that we will be focusing on research questions that come from a need to teach problem solving skills as a more prominent part of business curricula. This is probably not a surprise, since you know that a recurring theme of all of the numerous reform reports is the need to do a noticeable more effective job in imparting to students broad academic and employment skills. These may be called "Basic Skills, Thinking Skills, and Personal Qualities" as in the SCANS report (1991), or they may be called "Domain Knowledge, 'Tricks of the Trade,' Cognitive Management Strategies, and Learning Strategies" as in the publication Solutions by the National Council on Vocational Education (Berryman, 1990-91). The American Society for Training and Development and U.S. Dept. of Labor presents a similar case in the publication America and the New Economy (Carnevale, 1991). Here, in addition to the academic basics of reading and writing at work, and computation, other essential outcomes of education are described as the following:

> Learning to Learn
> Communication: Speaking and Listening
> Adaptability: Problem Solving and Creative Thinking
> Developmental Skills: Self Esteem, Goal Setting, Motivation, and Personal and Career Development
> Group Effectiveness: Interpersonal Skills, Negotiation, and Teamwork
> Influencing Skills: Organizational Effectiveness and Leadership Skills."

The topics in this list are not new to any of us; they even overlap considerably. Some people would argue that we have historically included these areas within the domain of business education and that teaching problem solving is nothing new for us. What may be new, however, is the need to identify more conspicuously the processes and the products of our instruction that yield this valued outcome. This will mean more than relabeling; it may mean reorganization. It certainly means that we need to establish our place as part of a total school curriculum which values problem solving as an outcome. It means we need to engage in one of the debates that is part of the problem-solving research literature: why has there been so little transfer from school subjects to other realms of life and work? And which broad model for teaching problem solving could facilitate the transfer of learning?

Transfer of Learning Problem

Business education is fundamentally committed to successfully teaching for transfer. While this is also the promise of other parts of the curriculum--the academic subjects have long been argued to have wide generalizability--vocational education explicitly promises to prepare students for an employment world that is separate from the classroom. If what is taught does not transfer to real work settings, the instruction cannot claim to have been successful. But successful transfer does not always follow from vocational instruction nor from broader academic study.

The transfer of learning question has been a perennial one in the educational psychology literature. Anthropologists and sociologists have recently contributed to the research findings that individuals do not predictably transfer knowledge in any of three situations where transfer should occur. They do not predictably transfer school knowledge to everyday situations. They do not transfer sound everyday practice to school endeavors, even when the school knowledge and out-of-school experience are clearly related. They do not even predictably transfer their learning across school subjects.

The subjects in these studies (Resnick, 1987b; Pea, 1987; Perkins & Salomon, 1989; Lave, 1988; Scribner, 1984) have been quite varied:

- workers in a dairy plant making up orders from mixed cartons of milk products, but not able to carry out the same calculations in school-type problems;
- grade school students who view change-making problems as different operations from school arithmetic, and carry them out differently;
- physics students who do not recognize Newtonian physics principles when encountered outside of the classroom;
- students learning statistics who do not recognize practical applications of the concepts learned; and
- programming students who do not apply the planning concepts taught to other contexts where these procedures might reasonably apply.

At a less formal level, all teachers regularly observe instances where students do not recognize without assistance when it is appropriate to apply concepts previously mastered. For example, students may not notice in a new word processing exercise that the recently introduced indent/outdent formatting command could be used, or they may not recognize the location in a new spreadsheet assignment where a lookup table would be a good solution. Noticing appropriate transfer of learning opportunities ought to be easier in school settings where students might expect such practice. It is a greater problem in employment contexts when students don't recognize that previous knowledge and skills could be used; their knowledge remains essentially inert, as if it had never been encountered.

Approaches to Teaching Problem Solving

Several strategies are available to address the problem of teaching problem-solving skills in such a way that knowledge remains useful to students--transfers to intended school, employment, and everyday contexts. To delimit our consideration of solutions, three broad approaches will be examined: General or direct approach to teaching problem solving; infused or integrated approach of teaching problem solving within the context of other subject areas; and immersed or indirect approach of allowing problem-solving skills to develop by focusing in-depth attention on a content area. Before examining the arguments for these different approaches, it is important to provide a definition of problem solving.

Problem solving is frequently considered a part of what are generally called higher-order thinking skills or critical thinking skills. Critical thinking skills carry with them an aspect of evaluation that may lead to a judgment about warranted positions, but not necessarily action. Problem-solving suggests the need for a decision that leads to a plan of action. In fact, problem solving may be viewed as focusing on a process, while critial thinking gives attention to a product.

The problem-solving literature is large, and much attention has been given to defining problem-solving. In essence, however, there are two essential features to the process: a state of doubt or difficulty, and a search for a way to resolve this doubt or difficulty. It is important to notice that the **difficulty** is one that is perceived by the person having the problem. The search for a solution can involve several stages.

Essentially two broad types of problems can be encountered, again the perception of type being from the point of view of the person having the problem. One is well-structured problems in which the end goal is well defined and the procedures to reach that goal can also be clearly specified. There may be only one acceptable end goal and one acceptable route for reaching it. In this case, the problem may be called more of a "task" or a "puzzle" rather than a problem. A "problem" suggests more ambiguity over either the desired resolution--the goal--and/or how to get there. When both the goal and the process of resolution could have multiple acceptable answers, the problem is identified as ill-structured. Some writers have called these "wicked" problems. Unfortunately, everyday problems are more likely to be ill-structured, even if part of their solution contains fairly well-specified procedures and sources of information.

It is the ability to deal with ill-structure problems that business educators eventual want to develop on the part of their students. It is sometimes assumed that such problems can only be addressed after students have first mastered lower-level skills and well-structured problems. Teachers have frequently identified problem solving activities as instructional outcomes fairly high on the

cognitive taxonomy and ones in which primarily advanced students are able to engage. Such is no longer the view of cognitive psychologists. As succinctly stated by Resnick (1987a):

> The most important single message of modern research on the nature of thinking is that the kinds of activities traditionally associated with thinking are not limited to advanced level of development. ... This assumption--that there is a sequence from lower level activities that do not require much independent thinking or judgment to higher level ones that do--colors much educational theory and practice. Implicitly at least, it justifies long years of drill on the "basics" before thinking and problem solving are demanded. (p. 8)

Rather than being inherent at the advanced levels of instruction, problem solving is a process engaged in at all levels of learning. A "problem" is not always easily recognized because the definition must come from the learner.

Uncertainty about the problem solution and inability to solve it by applying a quickly discernible procedure is made clearer by the following characterization of "higher order thinking" which Resnick (1987a) has provided:

* Higher order thinking is non-algorithmic. That is, the path of action is not fully specified in advance.
* Higher order thinking tends to be complex. The total path is not "visible" (mentally speaking) from any single vantage point.
* Higher order thinking often yields multiple solutions, each with costs and benefits, rather than unique solutions.
* Higher order thinking involved nuanced judgment and interpretation.
* Higher order thinking involves the application of multiple criteria, which sometimes conflict with one another.
* Higher order thinking often involves uncertainty. Not everything that bears on the task at hand is known.
* Higher order thinking involves self-regulation of the thinking process. We do not recognize higher order thinking in an individual when someone else "calls the plays" at every step.
* Higher order thinking involves imposing meaning, finding structure in apparent disorder.
* Higher order thinking is effortful. There is considerable mental work involved in the kinds of elaborations and judgments required. (p. 3)

How can teachers engaged students in activities that have these characteristics? Three broad approaches are generally presented as possibilities--none of them discretely separable from the others. However, the assumptions inherent in each one make each worth considering. Implicitly, teachers who deliberating assume responsibility for developing students' problem-solving skills will find themselves leaning toward one of them. The Curriculum Update publication from the Association for Supervision and Curriculum Development entitled "Teaching Thinking" (Willis, 1992) summarizes these well. The comments which follow draw on this publication as well as others.

General or Direct Approach

When prominence is to be given to the teaching of problem-solving strategies, the creation of courses and programs separate from subject-matter content is readily identifiable. It is argued that general heuristics or "rules-of-thumb" exist that need to made explicit to students, that students will not discover such tactics on their own. Polya's (1957) book, How to Solve It, is a good source of the ideas that have been summarized in many other places since its publication. These include such practices as breaking a problem into subproblems, using diagrams to represent a problem in different ways, asking if aspects of the problem have been seen before, having a plan, checking results, and more.

General processes of thinking and problem solving are made explicit with two expectations: these processes have wide generalizability to many subject areas, and students will be better able to focus on the process unencumbered with unfamiliar subject matter. Abstract tasks, puzzle-like problems, and informal life situations with which all are assumed to be familiar are the content.

Numerous commercial programs have been described in the literature, and this would not be the place to repeat such discussions. Some of the names are the following (Glaser, 1984; Willis, 1992; Perkins & Salomon, 1989):

Problem Solving and Comprehension: A Short Course in Analytical Reasoning
Instrumental Enrichment: An Intervention Program for Cognitive Modifiability
The Productive Thinking Program: A Course in Learning to Think
The CoRT Thinking Program
HOTS (Higher Order Thinking Skills)
Philosophy for Children
Project Intelligence

The debate about the value (i.e., transferability of skills) of these programs has raged for years. Exchanges by scholars such as Ennis (1989, 1990) and McPeck (1990) in the Educational Researcher highlight the issues in all their complexity. While a brief summary does not do justice to the topic, in essence Ennis argues that "[It] makes sense to talk about significant general critical thinking abilities and dispositions, that at least some are not trivially obvious, and that applying an ability in a variety of domains makes it a general ability" (Ennis, 1990, p. 16). In contrast, McPeck would argue "[There] are almost as many different kinds of critical thinking as there are different kinds of things to think about. The criteria for applying and assessing critical thinking derive from the thing... discussed or thought

about at the time" (McPeck, 1990, p. 10). Both these writers have contributed to the continuing debate in a recent publication, The Generalizability of Critical Thinking (Norris, 1992).

This approach may seem removed from the considerations of business teachers since we are not likely to teach such a general course. The teachers who teach reading and mathematics, long defended as school subjects because of their generalizability, are the teachers who may teach such general problem solving courses. Rather, it would seem, we might benefit if students completed such a course before pursuing problem solving activities in business content. However, we should not exclude ourselves from this domain too quickly. Teaching business management and business communications can lead many teachers into situations where a general approach to problem solving seems appropriate. Books by business management consultants abound in this area, such as The Art of Problem Solving by Ackoff (1978).

Courses in general problem solving sometimes come with different names, and business teachers teach them. Courses in ethics and in study skills are often selected as appropriate courses for business teachers. Such courses may start as business ethics, or as a notetaking courses that draws upon business teachers' ability to teach shorthand. Then they broaden to go beyond the business focus. The study skills remain when the notetaking system is dropped because developing the skill takes too much time. The human relations course is another course commonly taught by business teachers that presumes general skills and, particularly, dispositions, can be taught separately from any specific subject matter or employment contexts. Are these for us? Are these for you? Are these effective ways to address teaching general skills?

Infusion or Imbedded Approach

The conflict between the general approach and the need for specific knowledge can lead to the compromise of directly teaching problem-solving strategies, but within the context of other school subject areas. Perkins and Salomon (1989) have moved in this direction after arguing that "the more general the method, the weaker the method" (p. 19). While it may be possible to describe general approaches and apply them to relatively knowledge-free problems, respected scholars (Glaser, 1984; Larkin, 1989; Resnick, 1987b, 1989) argued that there are strong interactions between the structure of knowledge and cognitive processes. Larkin (1989) strongly states that "Although attractive, the notion that transferable knowledge is a core of general problem-solving skills has been historically unproductive. There is not good evidence that instruction in such skills improves performance" (p. 303). Transfer to meaningful contexts cannot be expected if problem-solving processes are not identified and used within these same contexts.

The distinguishing characteristic of the infused approach to teaching thinking skills or problem solving is that a balance is attempted in which about equal attention is given to both subject-matter content and thinking processes. Of particular importance in this approach is attention to metacognitive or executive-control thinking processes, and, as a second category, critical evaluation of prior judgments or decisions. Of the three approaches, the infused approach probably currently receives the greatest implementation effort. The term applied to a wide range of instructional activities directed to these ends is "cognitive apprenticeship." The National Council on Vocational Education (1990-1991) in its Solutions publication has provided strong endorsement for this model. Some of the arguments that have supported this integration are reviewed below.

The importance of subject matter and real-world contexts is particularly important when program goals include preparing students for employment. In the context of preparing students for real-world participation, Resnick (1987b) has identified discontinuities between education as practiced in school and its application in daily life and work which hinders potential transfer. These discontinuities are briefly summarized below, and the last in this list, situation-linked skills and knowledge, implies the importance of context in problem solving.

1. School - Individual performance
   Nonschool - Socially shared performance
2. School - Unaided thought during testing
   Nonschool - Use of cognitive tools, such as references, calculators, and computers.
3. School - Symbolic thinking
   Nonschool - Objects and situations
4. School - General skills/knowledge
   Nonschool - Situation-linked skills/knowledge

Difficulty obtaining evidence for the transfer of general problem-solving skills (Frederiksen, 1984; Salomon & Perkins, 1987 & 1989) has heightened the need to specify the nature of the subject-matter or the situation-specific context in which problem solving is to occur. Rogoff and Lave (1984) maintain that "Thinking is intricately interwoven with the **context** of the problem to be solved. The **context** includes the problem's physical and conceptual structure as well as the purpose of the activity and the social milieu in which it is embedded" (p. 2). Further, "Evidence suggests that our ability to control and orchestrate cognitive skills is not an abstract context-free competence which may be easily transferred across widely diverse problem domains but consists rather of cognitive activity tied specifically to **context**" (p. 3). Pea and Kurland (1987) share this view and maintain that, "In most problem-solving tasks, it is impossible to apply the supposed context-free skills without initially having essentially domain-specific knowledge" (p. 155) and, further, "Cognitive scientists have found that extensive knowledge is necessary for expert-level performance in solving problems in every content area studied" (Pea, 1987, p. 134).

Other areas of research add support to the argument of making subject matter prominent in order to teach problem-solving skills. Developmental studies with children support the conclusion that thinking is greatly influenced by experience with new

information (Glaser, 1984). Comparisons of experts versus novices in different fields of study has lead to the conclusions that "the problem-solving difficulty of novices can be attributed largely to the inadequacies of their knowledge bases and not to limitations in their processing capabilities such as the inability to use problem-solving heuristics" (Glaser, 1984, p. 99; see also Perkins & Salomon, 1989). Glaser extends his arguments through research comparing high- and low-scoring individuals on aptitude tests. As a result of the differences observed between these two groups, he maintains

> Learning and reasoning skills develop not as abstract mechanisms of heuristic search and memory processing. Rather, they develop as the content and concepts of a knowledge domain are attained in learning situations that constrain this knowledge to serve certain purposes and goals. (1984, p. 99)

This same conclusion is stated even more strongly by a Vanderbilt University researcher team (Bransford, Vye, Kinzer, & Risko, 1990): "Overall, the evidence is overwhelming that people's abilities to think and solve problems is affected considerably by the nature and organization of the knowledge that they have already acquired" (p. 384).

To give you an example of the impact of context on problem solving, consider the following question.

> A financial administrator is required to enforce the following rule:
>
> If a purchase exceeds $2,000, then approval at the central level is required; there will be a signature on the back of the form.
>
> The administrator, you, is given four forms as follows:
>
> Purchase of $500
> Purchase of $2,500
> No central approval given
> Central approval given
>
> By turning over each form, the administrator can see the complete situation, either that approval was or was not given, or the amount of the purchase.
>
> Which forms could be turned over to confirm or refute that this rule was being followed consistently?

If you selected the form containing "No central approval given" or the form containing "Purchase of $2,500," you would be correct. The other two would not confirm whether the rule was being followed or not. You probably found this little test to be easy.

Try this one.

> The rule is the following: If a card has a vowel on one side, then it has an even number on the other side.
>
> You can see these symbols on one side of each of four cards:
>
> A D 4 7
>
> Now which card or cards could you turn over to find out whether the rule is true or false?

If you selected the "A" or the "7," you are correct. You would learn nothing about the validity of this rule from the other cards. The falsifying potential of the "7" is particularly powerful, since the logic being tested here cannot be confirmed by matches with the rule, such as "A" having an even number on the back, as much as disconfirmed by a negative result from the "7" having a vowel on the back. The "D" and the "4" could have anything on the back and not disprove the rule.

Even those these problems are logically identical, it was probably easier to see in the purchasing instance that you would learn little from the either the purchase under $500 or the one that had been approved. It really didn't matter what was on the other side. The context of the purchasing problem, however, made it very clear that the other two mattered: purchases over $2,000 needed approval; and if there had been no approval, a purchase over $2,000 would mean a problem. The familiar context made this easy.

A cognitive psychologist were inform you that you were probably using a "permission schema" to make this connection (Cheng and Holyoak cited in Lockhart, 1992, p. 62). It is not likely that the formal logic of "If **p** then **q**," the process needed for the vowel/even number rule, was as easy to use. What you already know has a powerful effect on how you think.

Immersion or Indirect Approach

The third broad approach to developing higher-order thinking skills, the immersion or indirect approach, may be viewed as shifting the balance of emphasis to the content or subject-matter and less to explicit attention to the necessary thinking processes. This approach does not appear to have received any specific consideration within business education literature. In fact, it has probably been rejected from consideration in the recent Forum article which stated bluntly, "Learning how to think is not an automatic by-product of studying a subject" (Chalupa, 1992, p. 21). Before exploring the nature of this shift to greater subject-matter emphasis, more attention needs to be given to what is meant by subject matter, by ideas, and by context.

The breadth of the meaning of the term "context" needs to be explored. While Ennis (1989) is critical of the ambiguity of the concept of subject-matter domains, he acknowledges the intuitive first reaction of teachers to think of a context as being related to school subject matter. As was suggested by Resnick (1987b)

in describing the discontinuities between in-school learning and out-of-school application, situation-linked skills imply the social context of the problem as well as the topic or subject-matter domain. The concept of "situated cognition" (Brown, Collins and Duguid, 1989) maintains that the context for real-life problems includes the culture in which the problem occurs, or "the activities of a domain are framed by its culture" (p. 34).

The sociohistorical psychology of Vygotsky (1978) has been the influential source of this broader definition of context. Rogoff and Lave (1984) describe the social context as follows:

> The social **context** affects cognitive activity at two levels, according to **Vygotsky**. **First**, sociocultural history provides tools for cognitive activity (e.g. writing and calculators) and practices that facilitate reaching appropriate solutions to problems (norms, common mnemonic devices, scripts, frames for interpreting events). **Second**, the immediate social interactional context structures individual cognitive activity. Information regarding tools and practices is transmitted to children and other novices through interaction with more experienced members of society. In practical situations the **context** provides information and resources that facilitate the appropriate solutions of the problem at hand. (Rogoff & Lave, 1984, p. 4)

Prawat (1991), as an advocate for the immersion approach, has built on this thinking in developing the concept of transfer of learning. He argues that "When a concept or idea is used in a particular situation, it is recast, acquiring new meaning it did not possess before. The situation thus becomes part of the meaning of the concept" (p. 10). If concepts take on different shades of meaning in different contexts or situations, then transfer is enhanced by encountering a concept in a variety of settings in order to experience "various representations".

In the "immersion" approach the primary focus of instruction is not problem-solving processes, but subject matter or content ideas. Transfer of learning is the result of extensive involvement with concepts such that their application is recognized in several contexts and in connection with other ideas. Carrying out complex, multiple-stage reasoning in a given content area, but in a new context, is judged to have two preconditions: possession of an attitude of freedom by students to pursue knowledge, and possession of the necessary intellectual "tools" (concepts or ideas) to allow them to do so (Prawat, 1991).

There may be several reasons why focusing directly on problem-solving processes may be counter-productive. First, if the subject area is new to students, focusing both on content and one's own thinking processes in response to it may be an unreasonable expectation. Attention cannot be given to both. Second, even if the subject matter is well understood, one's problem solving processes may not be readily apparent. Even experts have had difficultly explaining why they took certain actions or made certain judgments. Examination of one's own thinking processes may necessarily be an after-the-fact activity, a rationalization of what one thought should have happened rather than what one really did. Thirdly, if many of our important understandings are in fact tacit or hidden processes (Collins, et al, 1989), such reflection may be an impossibly time-consuming task to carry out regularly.

A fourth and perhaps even more fundamental reason for rejecting the expectation of transfer as a result of giving attention to broadly generalizable thinking processes lies in the social-cultural context for learning and applying skill and knowledge. The issue is not just the distraction and difficultly of becoming aware of one's thinking processes. More important is that the thinking processes themselves change in response to the setting in which they are used and in response to the problem-solver's familiarity with the current setting. (See Luszcz, 1989). Experts use different processes from beginners and novices. Which model should be held up for emulation?

Thinking processes are likely to change with increased knowledge and skill. They may also change, for the same skill, with the setting in which the skill is used. The social setting can be described as a "community of practice," such as the community of business education teachers within a school, or the CPA's employed in an accounting firm. Understanding the community of which one is a part, or would like to be a part, affects both how a problem is perceived and the manner in which it is approached. For example, how one approaches the writing task of film critique will be different from the approach taken to write a law brief, or to write a memo in response to a customer complaint. (This difference is, in fact, a key reason for offering courses in business communication.)

The necessity for understanding the cultural setting or the community of practice of which any activity is a part is the basis of the concept of "situated cognition." The processes involved in approaching situations are not generalized processes, but framed by the context. With particular reference to the tools of a profession (of which business education has several, computers being a particular preoccupation), Brown, Collins, and Duguid (1989) make the following statements:

> Learning how to use a tool involves far more than can be accounted for in any set of explicit rules. The occasions and conditions for use arise directly out of the context of activities of each community that uses the tool, framed by the way members of that community see the world. The community and its viewpoint, quite as much as the tool itself, determine how a tool is used. Thus, carpenters and cabinet makes use chisels differently. Because tools and the way they are used reflect the particular accumulated insights of communities, it is not possible to use a tools appropriately without understanding the community or culture in which it is used. (p. 33)

(See Smogorinsky & Smith, 1992, for a discussion of these issues in the context of teaching composition and literary.)

While the immersion approach does not ask for continual awareness of and assessment of thinking processes, it does ask for examination of ideas. It is similar to the general approach with respect to requiring a considerable amount of discourse-centered teaching. This means an approach that may appropriately be described as Socratic rather than discussion. In the general approach, the focus of the dialogue is the thinking process; in the immersion approach, the ideas and main concepts inherent in subject matter are the focus. With regard specifically to the immersion approach, the "reciprocal teaching" model has been presented as one which alters classroom structure and subject-matter in a way that directly involves all students in developing a "community of learners acquiring and sharing a common knowledge base" (Brown and Palincsar cited in Prawat, 1991, p. 9).

Asking Research Questions

Where do the differences among these three approaches lead us with regard to research problems specifically in business education programs? We can go in several directions depending upon the fundamental assumptions that we want to make about the nature of classroom settings. The distinctive research paradigms available to use today ask us to do the same thing that we ask of students when we teach critical thinking skills--clarify our assumptions and what we want to know. Essentially, we can work with an empirical or an interpretative mode for asking research questions.

The following comments do not do justice to the different research approaches available to us. These brief generalizations in no way substitute for a course in both positivistic or interpretive research. The purpose of this research project, however, is to give you an opportunity to become engaged, potentially, in both or either type of research activity. If you are doing this for the first time, you will have yet to learn the full implications of the choices you will be making in our short period of time here. While we may identify the two approaches as quantitative or qualitative, the methods used are not as distinguishing as the assumptions behind the methods. You will hear more about both approaches, but I would like to identify the major differences and suggest the type of research question which might follow from either one.

In essence, the goal of positivistic or empirical research is to establish the existence of relationships among variables and to, thereby, become capable of predicting the consequences of certain actions. It assumes that

> empirically verified knowledge accurately describes how things really are out there in the social and educational world. This knowledge of social objects and events is independent of, or can be held separate from, our prejudices toward, feelings about, and normative evaluations of these objects and events. (Smith, 1989, p. 137).

If you accept the responsibility of clearly specifying the variables of interest to you and measuring them accurately, you could ask, as a very small sample, such questions as the following about teaching problem-solving skills:

* Is there a difference among the three broad approaches to teaching problem-solving skills and the ability of students to apply/transfer problem-solving skills in specified business contexts?

* Is there a relationship between how teachers describe their preferences for effectively teaching problem solving and what they actually do in their classrooms?

* Is there a relationship between how teachers describe (or actually carry out) effective practices for developing problem solving skills and selected teacher characteristics, such as age, years of teaching experience, business subjects taught, level of business instruction provided, or level of education completed in terms of advanced degrees?

* How do the problems involving a similar technical skill, such as a specific computer application, differ in various types of employment settings, such as entry-level clerical, para-professional accounting, or administrative assistant roles?

In contrast to the empiricist approach to research, interpretive inquiry focuses more on understanding people's motives, meanings and intentions than on explaining and predicting. It focuses on the "intentional, meaningful behavior of people and the interpretations people give to their own behavior and that of others" (Smith, 1989, p. 137). The context in with events occur is an essential aspect of understanding their meaning. It assumes that the realities that are most important to persons are not pre-existing phenomena to be measured objectively, but rather that these realities are socially constructed by the participants in ongoing human activities. If this perspective is compelling to you, the research questions you could ask about teaching problem-solving skills might include the following:

*What are the problems encountered by students in the context of the classroom projects and activities?

*What characterizes the types of problems that employees encounter in given employment settings?

*What types of problems do teaches think they are able to present to students in different business courses?

*What differentiates a well-structured problem in a given business context from an ill-structured problem?

*What does it mean to integrate the teaching of thinking processes within the context of specific business content?

*What content is implied by business contexts that could engaged students in ideas or concepts important to solving business-related problems?

These are a few examples--not exhaustive by any means. Before considering any of them further, you should take the time to reflect on your own assumptions about what teaching problem solving means and what research questions would assist you in further clarifying your thinking.

Clarifying Your Own Thinking

To facilitate discussion tomorrow morning, I will give you a homework assignment in the form of an questionnaire about teaching problem-solving and higher-order thinking skills. You will recognize that the items are ones for which differences of opinion can and do exist. The only correct answer is the one which best matches your own current thinking in this area. The last three questions ask you to classify yourself as preferring a general, infusion, or immersion approach for teaching problem solving. We will be able to tell you whether your answers to the questions support that judgment.

The purpose of this activity is to focus you thinking on the issues you have been reading about and listening to. You will then have a chance to involve all of the other attendees at this conference in further efforts to understand what teaching higher-order thinking skills means among business teachers--at least those business teachers who attend research conferences.

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